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ABSTRACT

This science teaching guide on insects and animals for 3-year-olds is based on a modification of the "Plan, Do, Review" approach to education devised by High Scope in Ypsilanti, Michigan. First implemented as an outreach early childhood program in North Carolina, the science activities described in this guide can be adapted to various early childhood environments. All activities described in the curriculum's sessions are hands-on and manipulative, based on the understanding that young children learn through doing. The four sessions in this guide for 3-year-olds cover: (1) various kinds of "creepy-crawlies" (insects and non-insects); (2) physical characteristics of insects; (3) metamorphosis; and (4) how insects protect themselves. Each session begins with group time and a story to introduce the science concept for that session. Children are then introduced to all the possible activities for the session. As the activities are explained, materials are placed in learning centers around the room. Children then choose and complete activities in the centers, with adults "floating" from center to center engaging children in questions intended to enhance their understanding. Sessions are completed with a group review time. Resource kits or enrichment activities are included with each session, and masters of patterns that may be needed for enrichment activities are included along with lists of suggested books, fingerplays, and songs that infuse science concepts throughout children's day. (EV)

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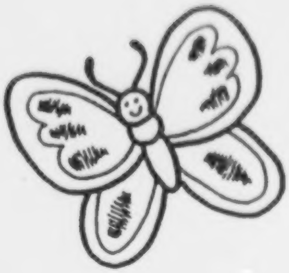

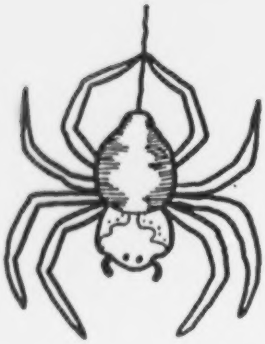

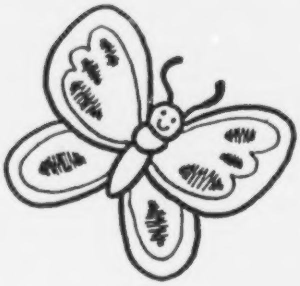

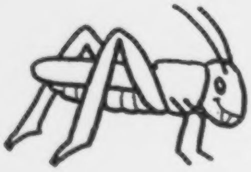

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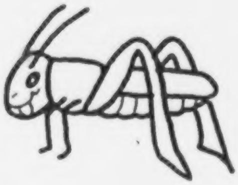
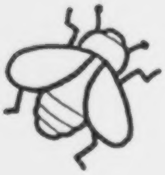




Developing An Early Interest In Science

A Preschool Science Curriculum

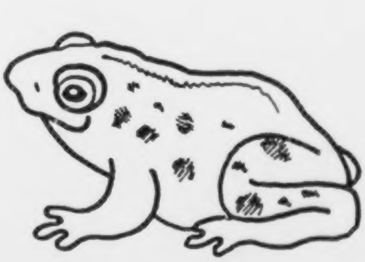
3 YEAR OLD

Curriculum written by

Gail L. Summer, Ed.D.

and

Kathleen Giovannini, M.A.



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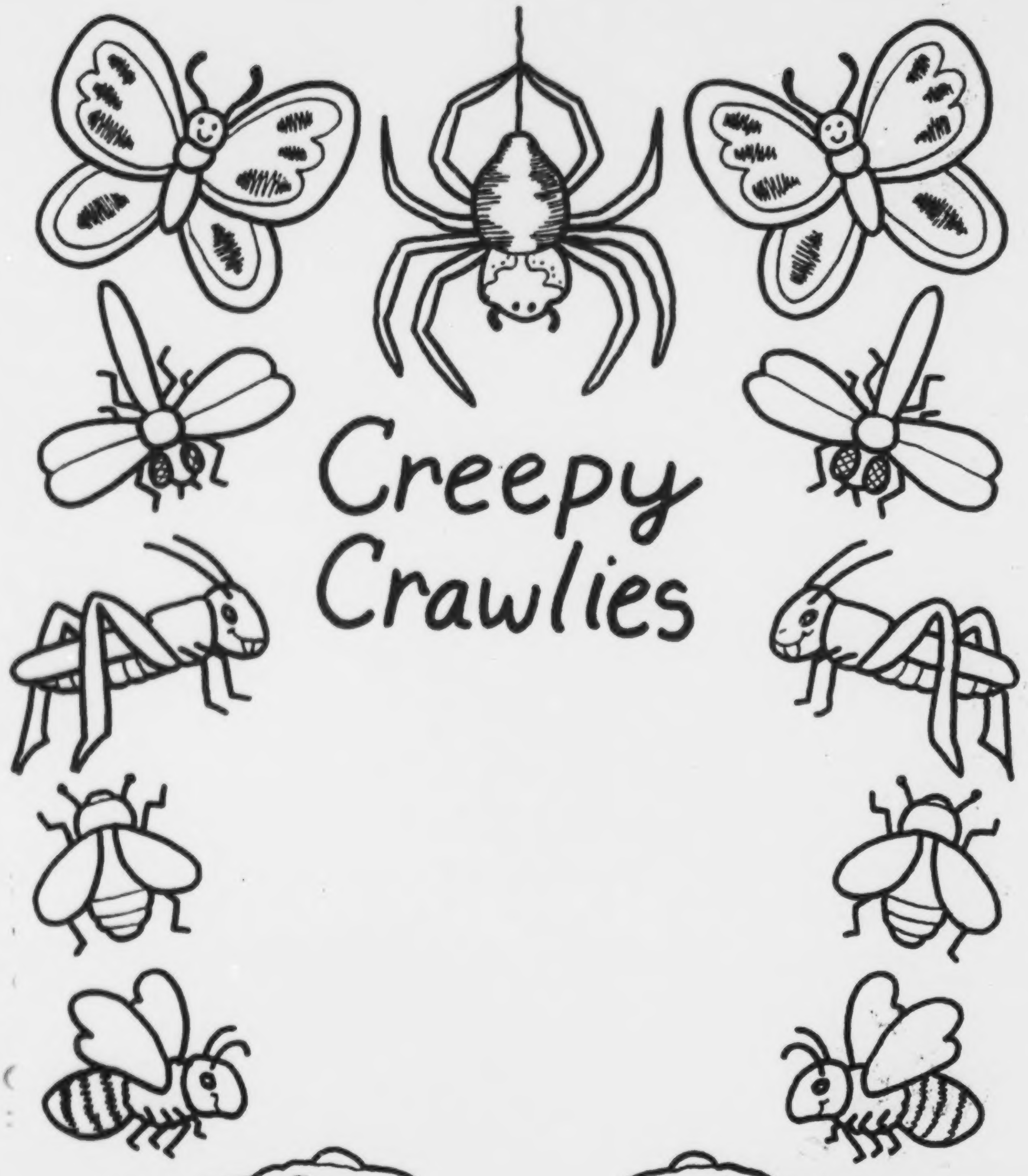

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Introduction

Philosophy

Developing an Early Interest in Science has been designed to not only develop an early interest in and enthusiasm for science, but also to excite young children about learning and discovering in general. While science is the content, the approach with which that content is presented is crucial to the success of developing an early interest in science and learning.

The young child learns in unique ways. The young child must experience science concepts. Simply talking about scientific concepts doesn't allow the child to understand and therefore attach meaning to the concepts. Perhaps the old Chinese Proverb, "I hear and I forget; I see and I remember; I do and I understand" is a good reminder of how the young child needs to experience the world. Doing is the key.

Given how the young child learns, **Developing an Early Interest in Science** is based on a modification of the Plan, Do, Review approach devised by High Scope in Ypsilanti, Michigan. The Plan, Do, Review approach introduces the concept and choices for the day, then allows each child to "plan" their activities by stating their choices for that day. After each child "plans," each implements his/her plan by "doing," or engaging in the activities selected. While the children are "doing," the teachers are interacting with them, asking questions to further elaborate the learning. After "doing," the children regroup and "review" by sharing what they did while interacting with the activities that day. The purpose of the Plan, Do, Review approach is to allow children control over their learning, while still holding them responsible for what they are learning.

Program Description

Developing an Early Interest in Science has been designed to be an outreach early childhood program. In its original form, a science educator from the Catawba Science Center in Hickory, NC visited child care/early childhood programs on a bi-weekly schedule. With each visit, one session was shared with the children. Teachers in the child care programs participated in training workshops prior to each new unit (units consisted of 4-6 sessions). The purpose of the workshops was for the teachers to make resource activities they used in their classroom after the session and to also gain an understanding of the concepts to be better able to assist the science educator while she was in their classroom.

Replication of the program in its original form is possible, but variations are also possible. The sessions could be presented at a science center with the children travelling to the museum rather than the educator travelling out to the children. The sessions may also be presented to small groups of parents and their preschoolers at a science museum for a brief morning session, somewhat similar to the library story hour idea enjoyed by parents and preschoolers for years. The sessions are also easily adaptable by teachers in child development centers for use in their own classrooms. Each session provides suggestions for numerous center ideas to enrich science activities throughout the preschool curriculum. With a little flexibility, the curriculum presented here can fit many formats and needs.

Session Description

In **Developing an Early Interest in Science,** each session begins with a circle or group time, with a song to say hello to everyone, and a story to introduce the concept for that session. Children are then introduced to all the possible activities for the session. As the activities are shared, they are placed in learning centers around the room. After the activities are all introduced, and the children have watched where each has been placed in the learning centers, the children "plan" as they are asked one by one what they would like to do during that day's session. (This whole introductory process takes about 10 minutes.)

As children make choices, they are dismissed from the circle to begin the "do" part of the cycle by engaging in their choices in the learning centers. Adults join the children in their activity in centers by floating from center to center to engage children in questions which enhance their activity and understanding. As children complete one activity, they may choose another activity in their plan. Children are not expected to rotate through the activities on an adult schedule or in groups of prearranged partners. Some children may only complete one activity during a session due to total engagement with that activity, and that's just fine. Other children may complete several activities and that's acceptable too. There is no predetermined number of activities which should be completed and no child is forced to interact with a particular activity.

After the time for "doing" has been completed (usually about 25 minutes), the children return to the circle group time to share ("review") what they did in centers. The teacher often helps this process by asking "Johnny, what did you play with in centers today?" When a child has a hard time remembering, or is quiet and unsure of reviewing at first, the teacher can help by suggesting, "Did you play with the magnets today? What happened when you used the magnet?" The teacher is able to ask Johnny about his "plan" because she floated through the centers and observed what each child did. (Reviewing takes about 5 minutes.) After each child has had a chance to review, the concept for the session is reemphasized or recapped by the teacher, and the session is ended.

Activities

The activities which are included in **Developing an Early Interest in Science** are all hands-on, manipulative activities. Every effort is made to make the concept for each session real and meaningful for children by allowing them to experience it. For example, rather than just talk about the fact that water flows because it is a liquid, the children actually pour water through clear tubes and watch the flow in action. Rather than talk about internal body parts children can't see, special dolls are used which allow children to uncover those hidden inside body organs such as hearts and lungs. Whenever appropriate books and puppets are used to enhance language. Science develops wonderful vocabulary! Puzzles are used to help children develop fine motor skills and explore science.

Real materials are used whenever possible. Real butterfly displays are explored rather than exclusively using colored pictures of butterflies. Real rocks of a wide variety are provided. Both real and replica fossils are manipulated. There is much to be said for allowing children to experience the "real thing." Yes, some science materials are fragile, but children will never learn to be careful unless there is reason to be so. Imagine touching and feeling a real fossil from a dinosaur! It takes little enticement to be gentle with a thing so old, if children are only reminded just how precious fossils are.

Resource Activities

Developing an Early Interest in Science has also been designed to include resource or enrichment activities to further extend the concepts from each session. Some resource activities suggest the use of real objects easily obtainable. Many other resource activities are made with patterns to produce manipulative games with which to review session concepts. Masters of the patterns and directions for their use are included with the curriculum. A brief listing of the resource activities made from the patterns along with additional suggested activities can be found in the session descriptions. More detailed directions for assembly of patterns to make the resource activities can be found in the teacher resource activity section. Lists of suggested books, fingerplays, and songs to be used by the classroom teacher in order to infuse the science concepts throughout the child's day are also included in a separate section of the curriculum.

Using **Developing an Early Interest in Science**

Whatever format meets your particular needs, it is important that you read the session through before trying it. As you read the session procedure, try to picture how and where you will lay out the center activities. Review the storybooks suggested and read them before the sessions. Practice the fingerplays before the session too. Anticipate the questions children will ask. Perhaps most important, get excited about what you will be sharing with the children! Your enthusiasm is contagious!

A suggested list of materials used in the centers is included with each unit. From time to time, materials are discontinued by manufacturers. If this should happen before you can access the materials suggested, review the session to determine how that particular material was used and select a substitute item. While the materials suggested worked well, there's nothing to say that a substitute item might not do just as well or even better.

Most important in using **Developing an Early Interest in Science** is to encourage children to play, interact, and enjoy. An early interest in science cannot be developed if children are chastised for messes and trying something that wasn't the adult intention. Science requires hypotheses and tests for hypotheses. Children are natural "little scientists" if allowed to explore. So relax and watch those little scientists blossom!

Creepy Crawlies

Session Activities

Three-Year-Olds

CREEPY CRAWLIES

Three-Year-Olds

Session 1

CONCEPT: There are many kinds of creepy crawlies. (Children will become familiar with various creepy crawlies: insects and non-insects.)

PROCEDURES:

1. Gather the children in a circle group. Open with a name fingerplay to distribute name tags/learn names. Immediately move into a creepy crawlie fingerplay to introduce the day's concept.

2. Begin by telling the children that today you are going to introduce them to all kinds of creepy crawlies. Ask them to tell you what they think creepy crawlies are, and if they can name some. Let the children share their ideas. Next, do a record activity about creepy crawlies with the children.

3. Tell the children that the next thing you are going to do is read the book In the Tall, Tall Grass. Ask the children to help you watch for any creepy crawlies that they might see in the pictures while you are reading the story. While you are reading, allow the children to name the creepy crawlies they see. Discuss the characteristics of the different creepy crawlies that the children notice.

4. Next, bring out the cricket and the gecko puppets. Tell the children you want them to meet two friends of yours who are visiting for the day. Talk about the puppets and how the cricket and gecko are both creepy crawlies, yet they are different too. Ask the children if they have ever seen a real cricket or gecko. After they have shared their experiences, bring out the live cricket and the gecko. Ask children what things are different about the puppets and the live cricket and gecko.

5. Remind children of the variety of creatures that we call creepy crawlies. Allow them to name some with you. Then, put out 2 rings made from yarn (or use small hoola hoops) in the middle of the group circle. Dump out an assortment of plastic play insects, amphibians and reptiles. Use the puppet to tell the children that the puppet needs help deciding if each creature is an insect or another kind of creepy crawlie. Have the puppet pick up one insect and describe some of its typical insect characteristics. Then have the puppet place the insect inside one of the rings. Next, have the puppet pick up a reptile/amphibian, and describe some of its characteristics. Then, have the puppet ask the children if this creepy crawlie is like the first one. The puppet then tells the children that it needs to go into the other ring because it is different from the insect. Next, pass out several of the plastic

creatures to each child and have them put their creepy crawlies into the appropriate hoops. Talk about characteristics as the children are putting the creepy crawlies in the hoops.

6. Ask the children which hoop the live cricket and gecko would go into if we were going to sort them. Discuss the reasons why they made the decision that they did. Is the cricket like these other insects in this hoop? Why? Do the same type questioning about the gecko.

7. Do a creepy crawlie fingerplay (repeat the opening concept fingerplay or select another creepy crawlie fingerplay) to resettle the group and prepare to disperse to centers. Once attention is regained, explain the center options available for that day. After you have explained the centers, ask the children to choose where they would like to go. As they choose, send them on their way. Allow the children to freely play and choose another center as they finish each task. Be sure to float from center to center and interact with the children as they play to reinforce the concepts for the day. Play music from the record Insects, Bugs, and Squiggly Things while children are in the centers. The center options today are:

A. Provide a variety of creepy crawlie puzzles for the children to use. Ask the children about the differences between insects/non-insects. Help them to notice things like body sections, body parts, legs, etc. Ask questions about where the animals live and what they might eat. Allow 2 to 3 children at this center.

B. Provide the live animals in a center so that children are free to observe them. Provide several different sized magnifying glasses for children to use. Talk to the children about why they need to use magnifiers to see some of the animals clearly. Talk about size, color and other differences. Reinforce insect and non-insect characteristics, by pointing out some of the actual characteristics to the children. Allow 2 to 3 children at this center.

C. Provide the cricket and gecko puppets in a center for the children to manipulate. Encourage them to make up stories about them. Within the context of the stories, add information for the children by asking them questions about the creatures they are using. Discuss the differences between live creepy crawlies and puppets. Allow 2 children at this center.

D. Provide the plastic creepy crawlies and rings of yarn that were used to sort in group time. As children sort, ask them if there is another way to sort the creatures. Suggest ways of sorting such as: number of legs, no legs, wings, color and size. Allow 3-4 children at this center.

E. Provide an assortment of books on reptiles, amphibians, snakes, and insects for children to read. These must include books with photographs, facts, and stories. Talk to children about the pictures. Question children about habitats, coloring, hibernation and other facts that are brought out in the books. Read the books to the children at their request. Allow 3-4 children at this center.

F. Provide rain forest sponges, pond life sponges, large paper and paint at a center. Place the paint in shallow bowls. Use several folded paper towels in the bottom of the bowls to soak up the paint and form a paint stamp pad. Children press the sponge onto the paint-laden towel and then stamp pictures on paper. Be sure there are smocks for the children to use. While the children are painting, ask questions about color as well as creepy crawlie characteristics. Allow 2 children at this center.

8. Two minutes before you are ready for the children to clean up turn out the lights and make an announcement to warn them to begin finishing up whatever they are working on. After two minutes, turn out lights again and ask the children to clean up. Call children back to the group circle with a song. Allow each child to share one thing they learned or played with during center time. Next, read the book In the Small, Small Pond. Ask children to watch for creepy crawlies while you read the story.

9. Close with puppets to reiterate about insects and non-insects. Talk about the different items in the yarn rings. Let the puppet lead good-bye song and collect name tags. Allow children to hug and kiss puppet good-bye.

RESOURCE KIT

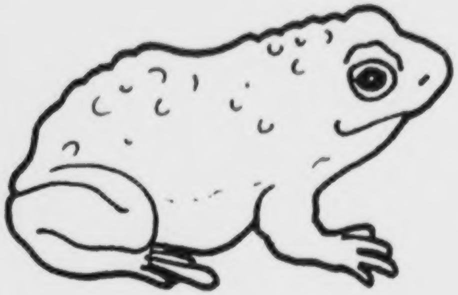
1. Leave behind an assortment of plastic creepy crawlies for sorting and pretend play activities.

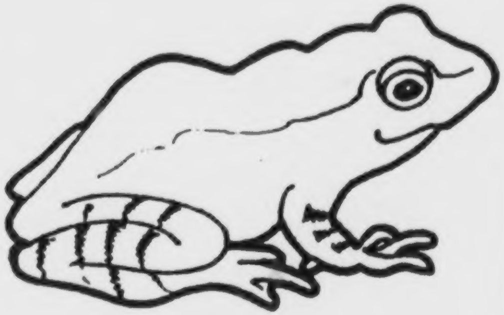
2. Use the patterns to make a lotto game in which children match pictures of amphibians, reptiles, and insects.

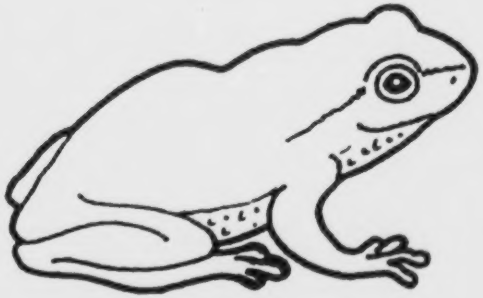
3. Use the patterns to make large, medium, and small pictures of creepy crawlies for size seriation.

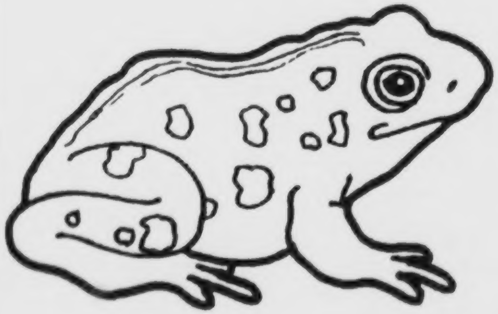
4. Use the patterns to make simple puzzles of various creepy crawlies.

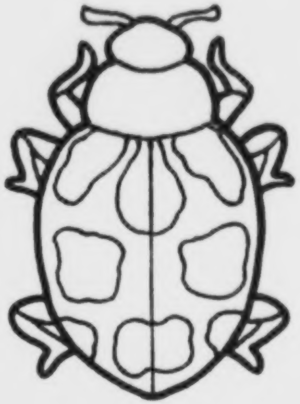
5. Leave behind several bug box magnifiers in each classroom.

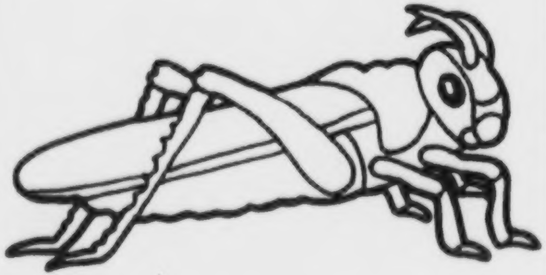


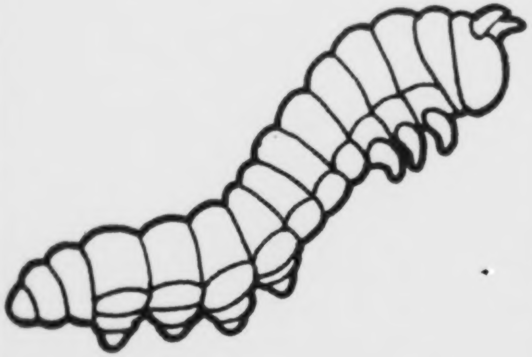


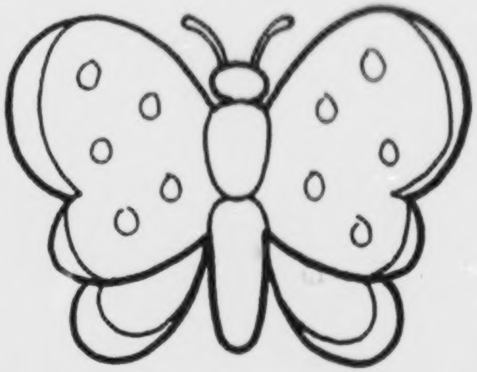


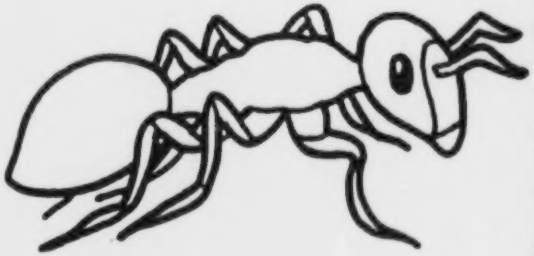












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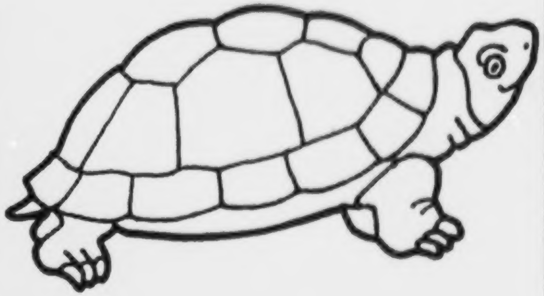

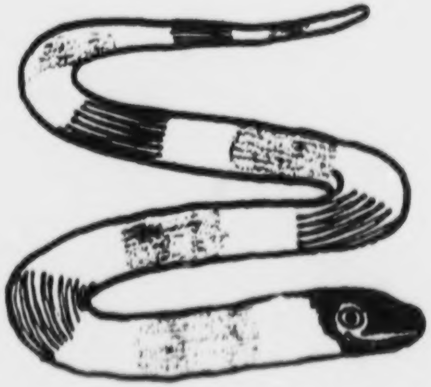

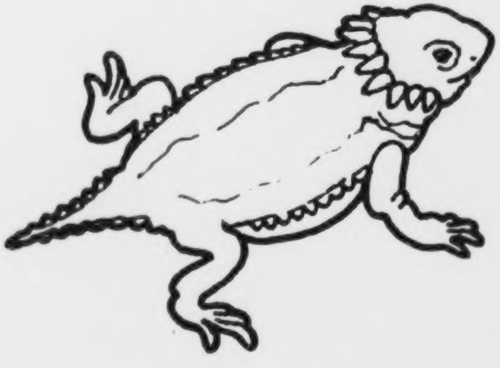

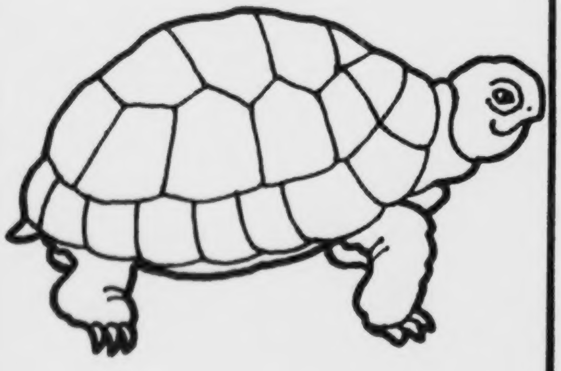

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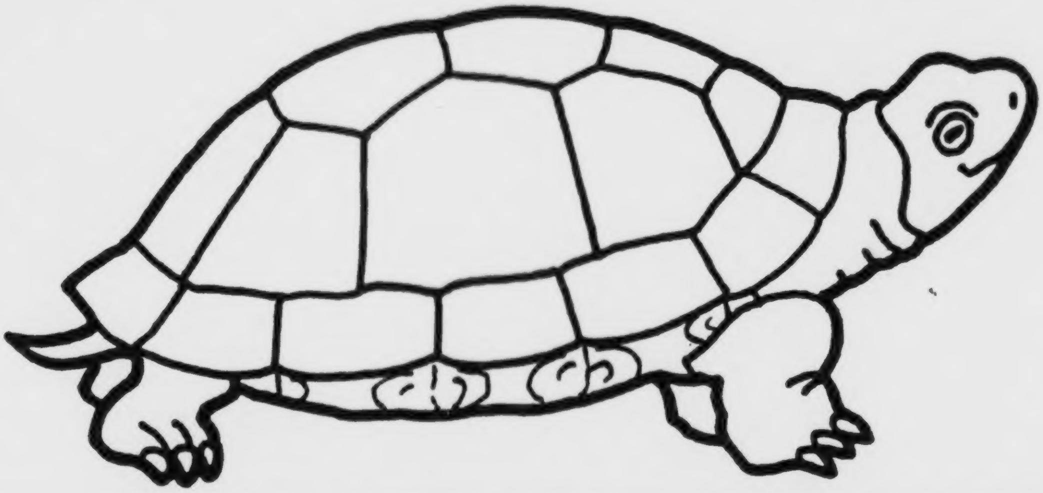

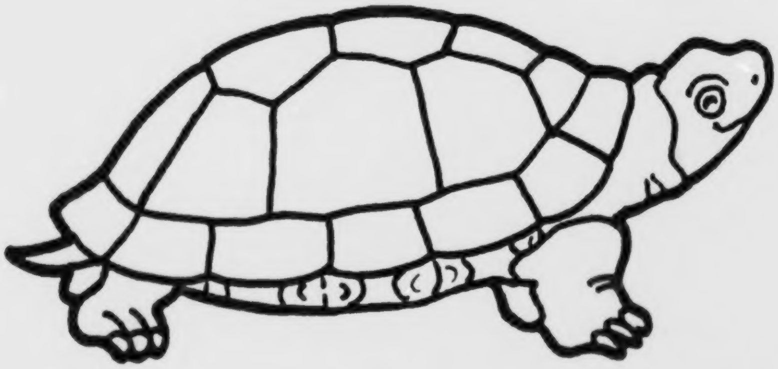

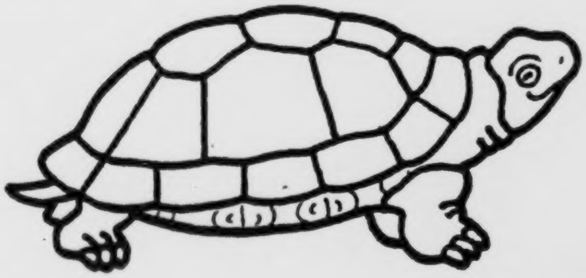

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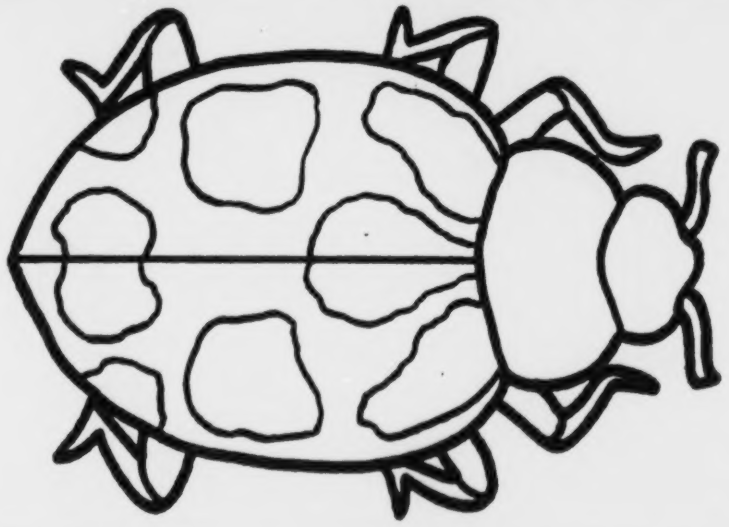

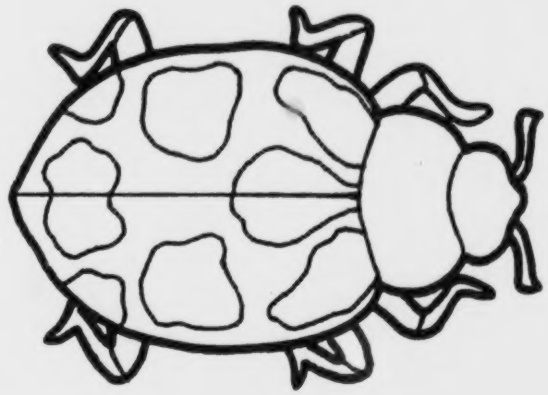

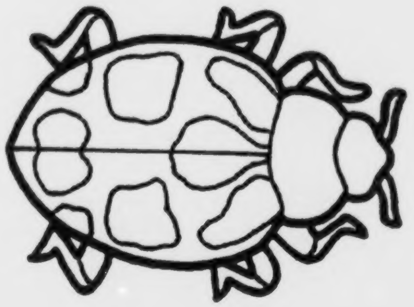

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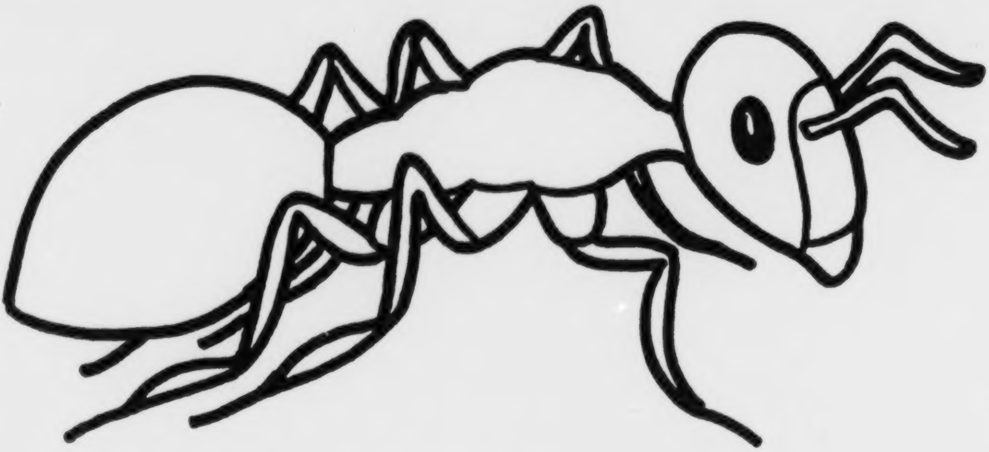

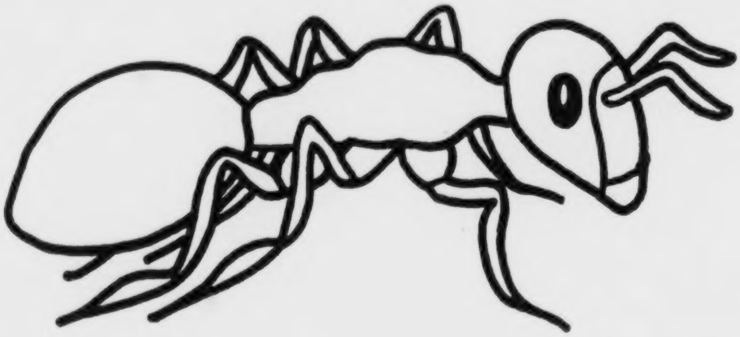

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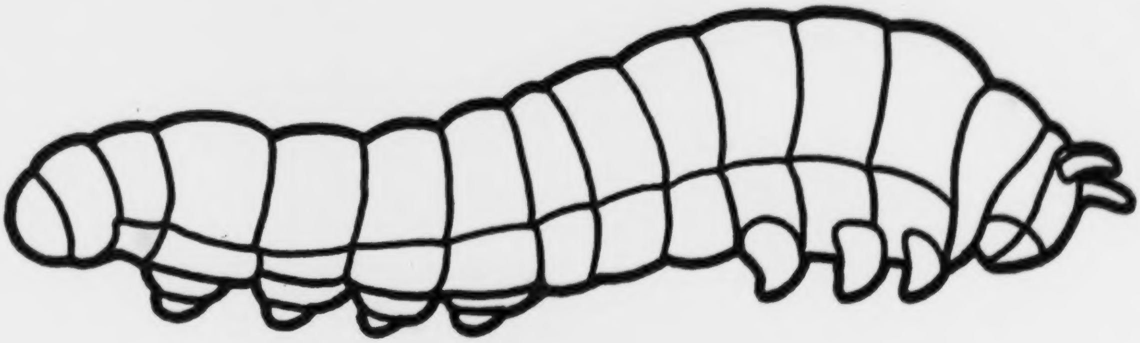

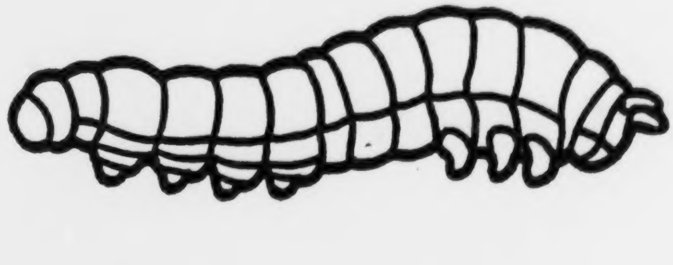

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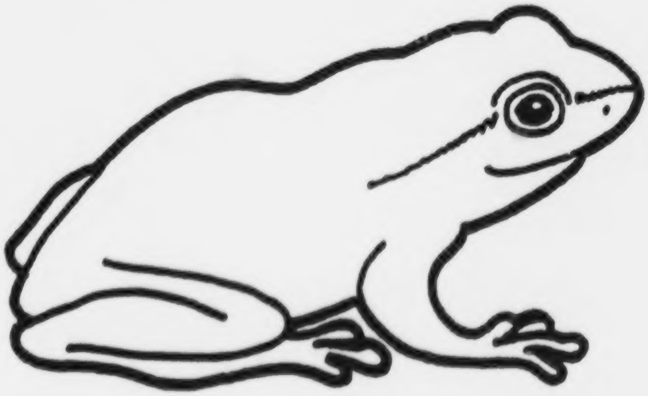

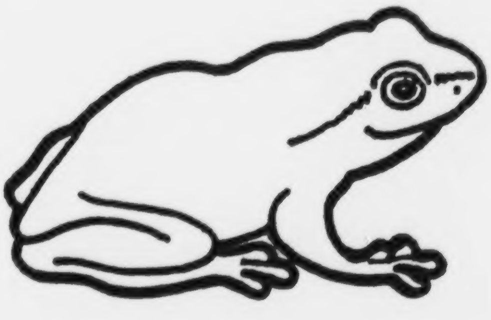

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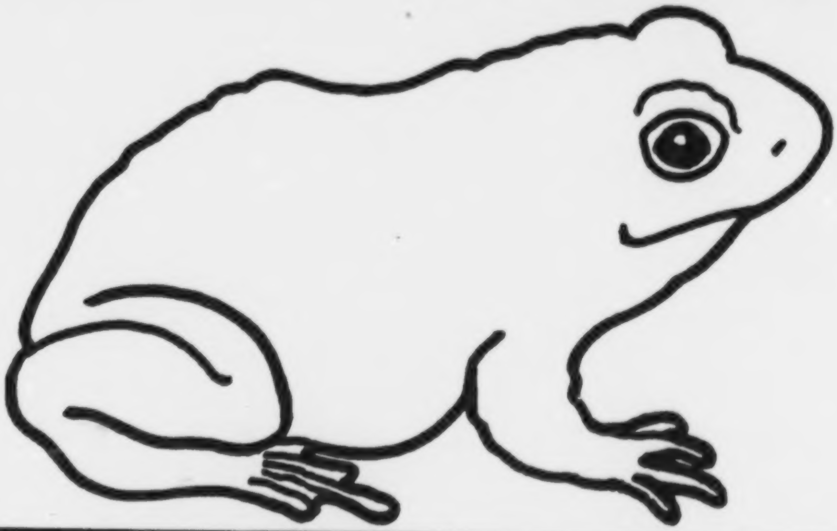

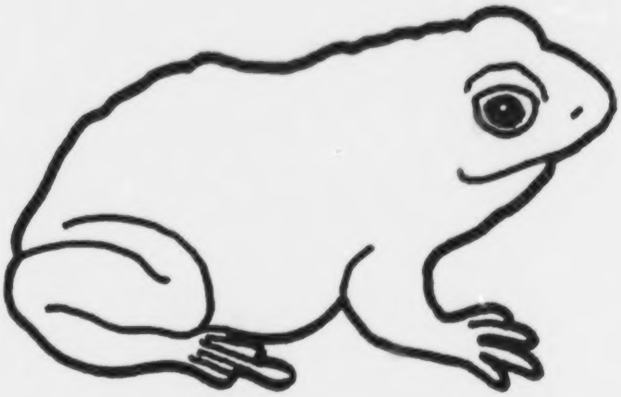

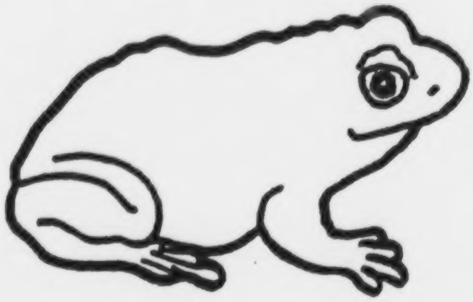

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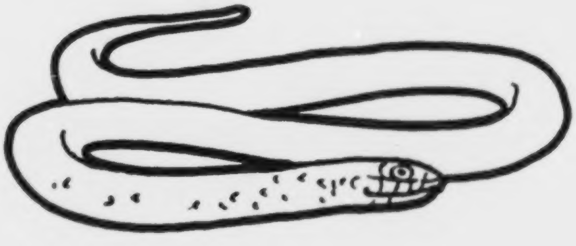

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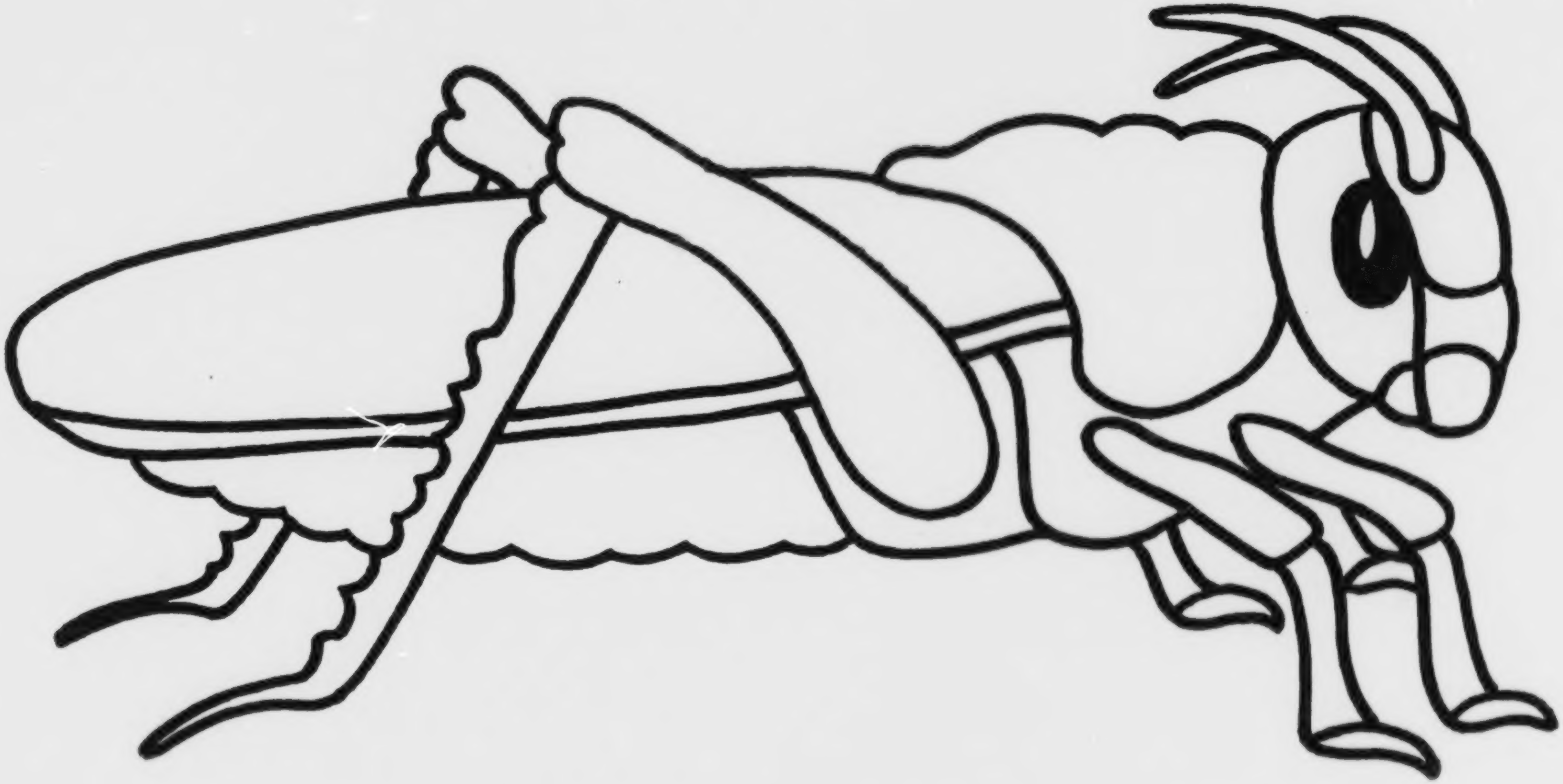

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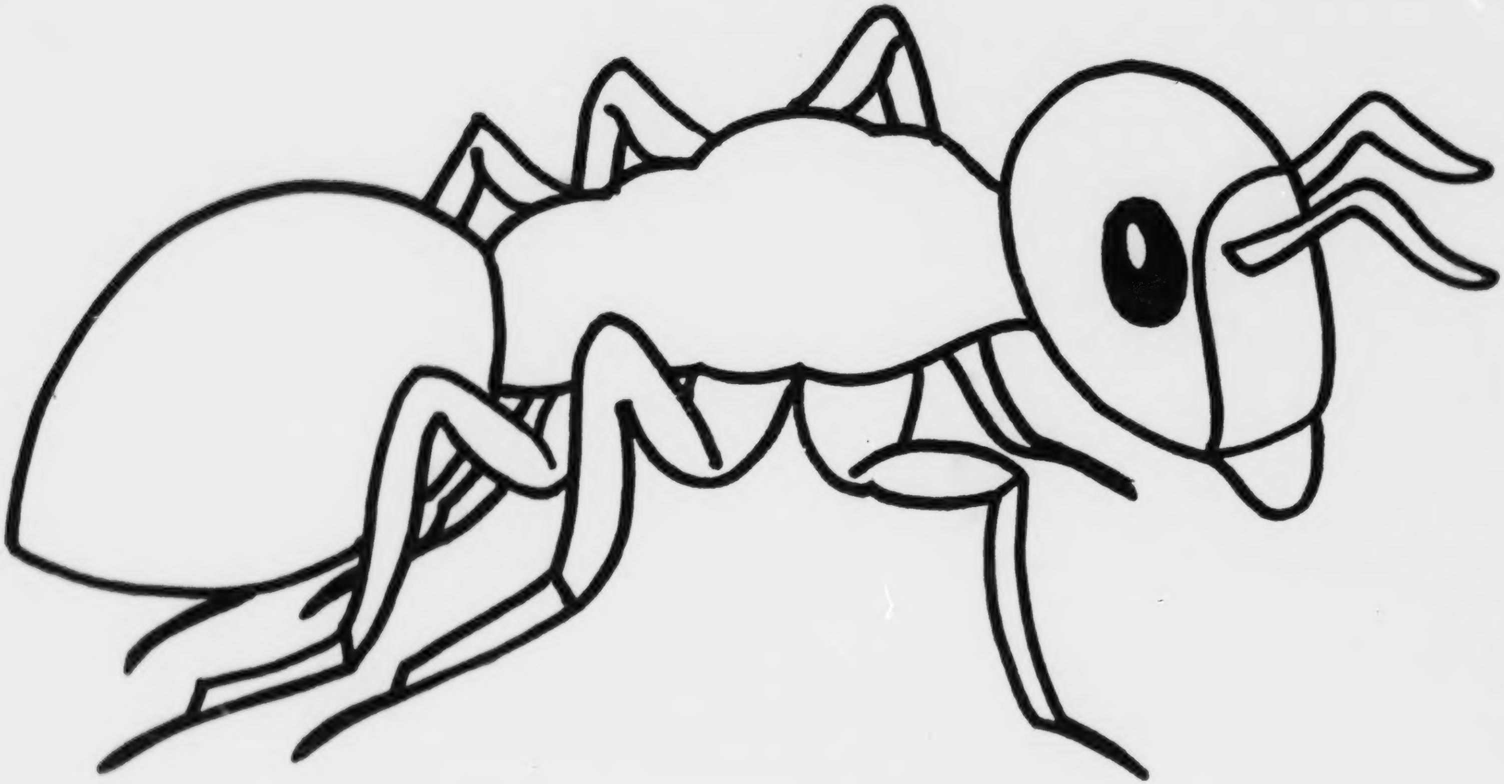

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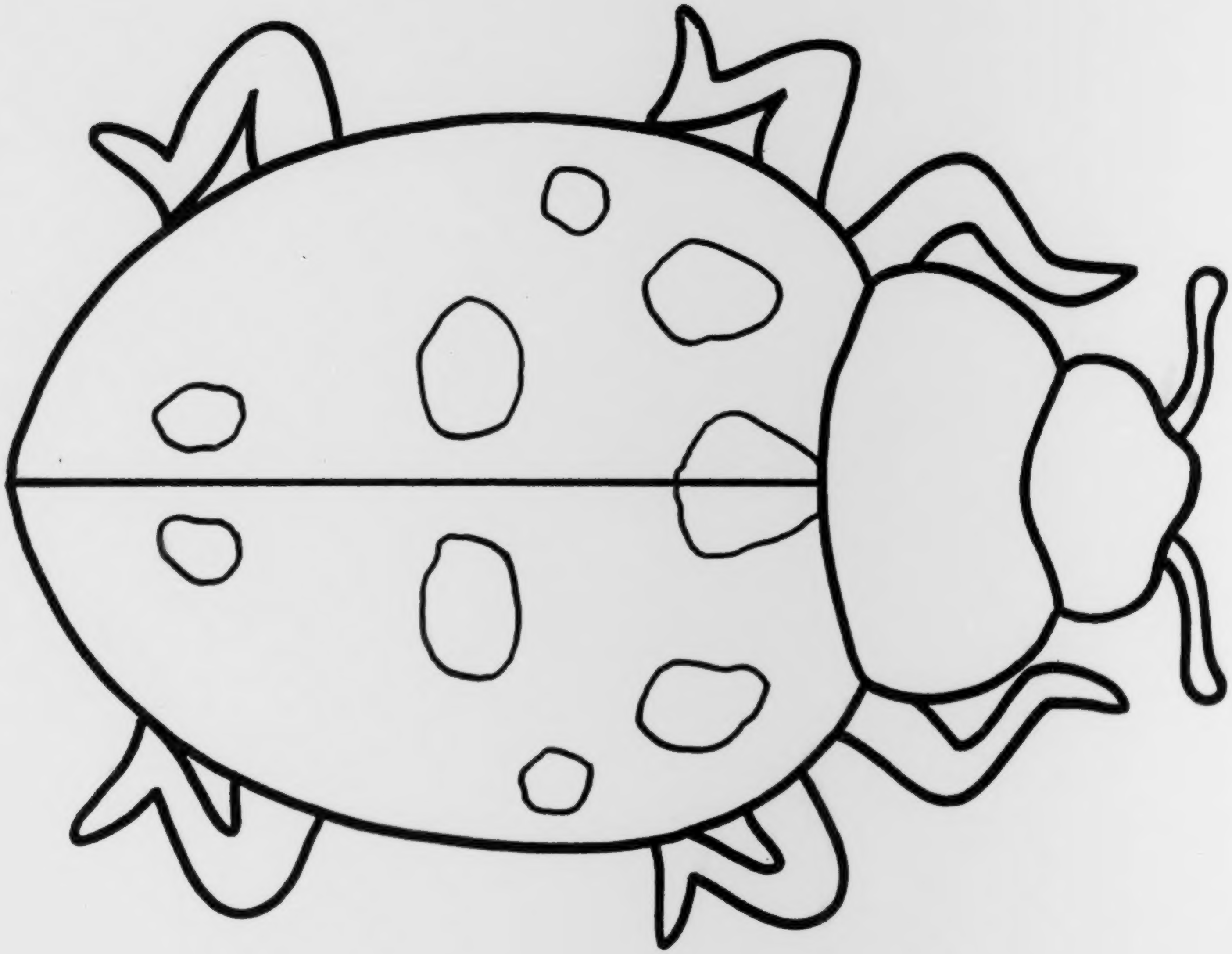

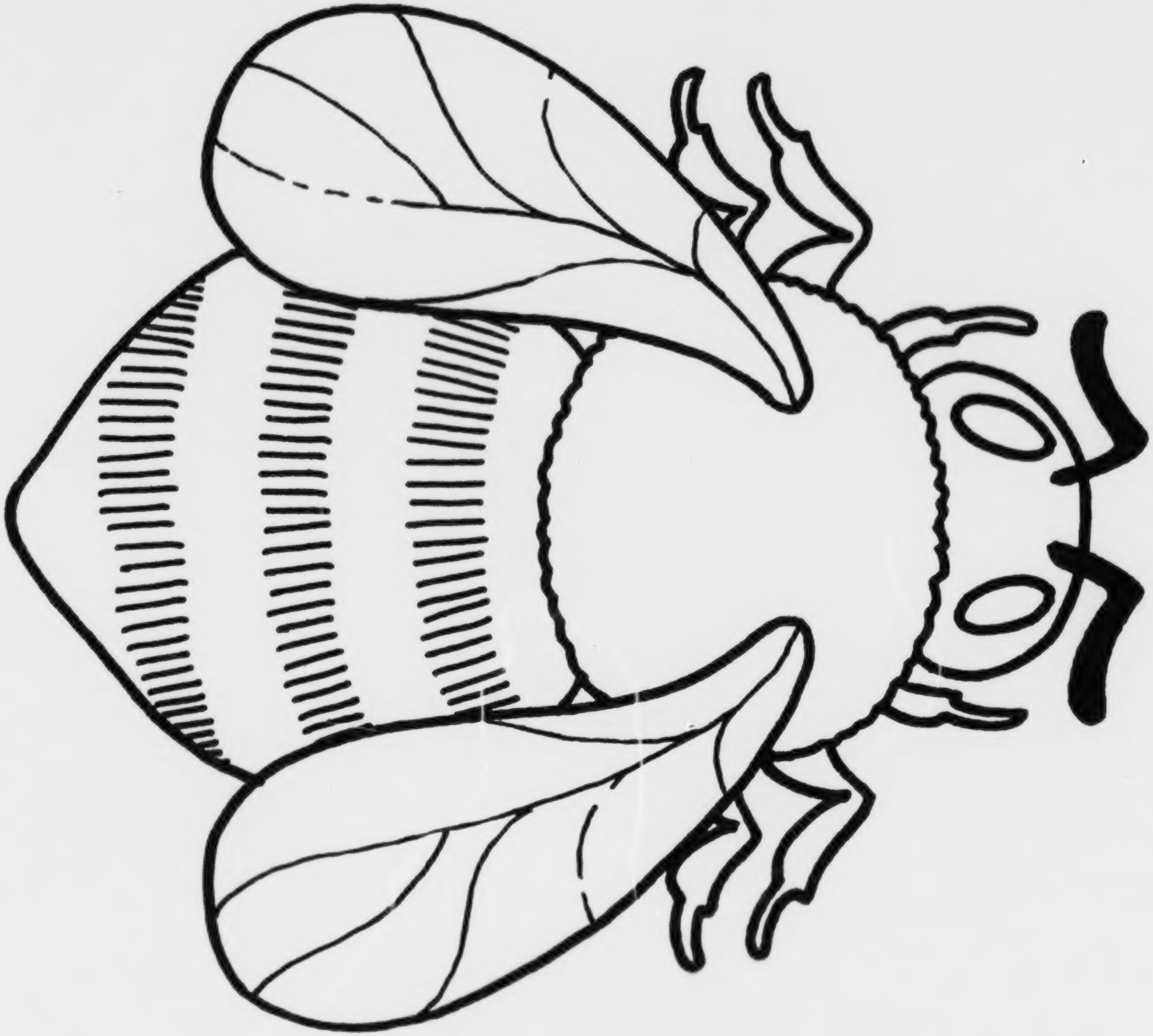

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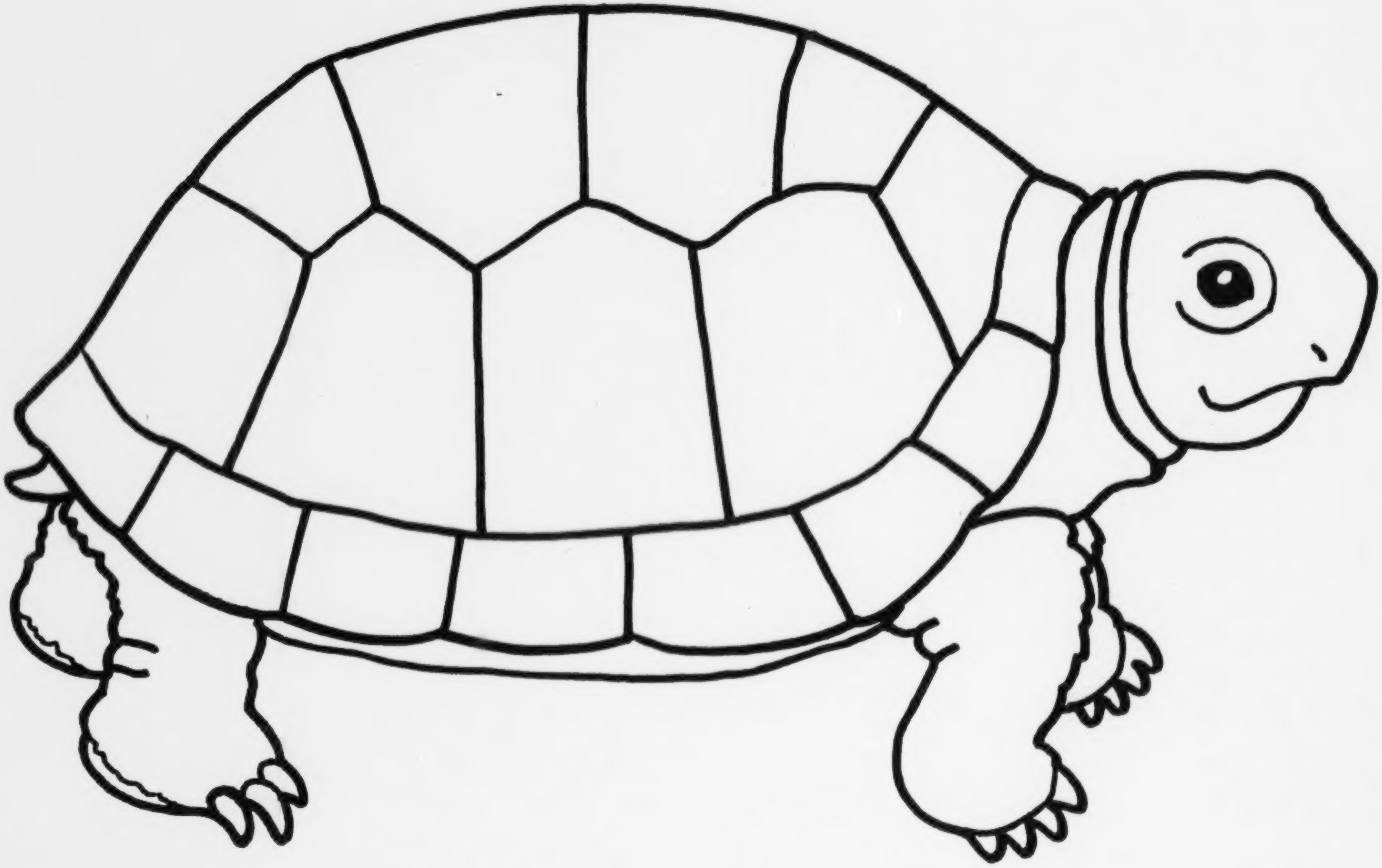

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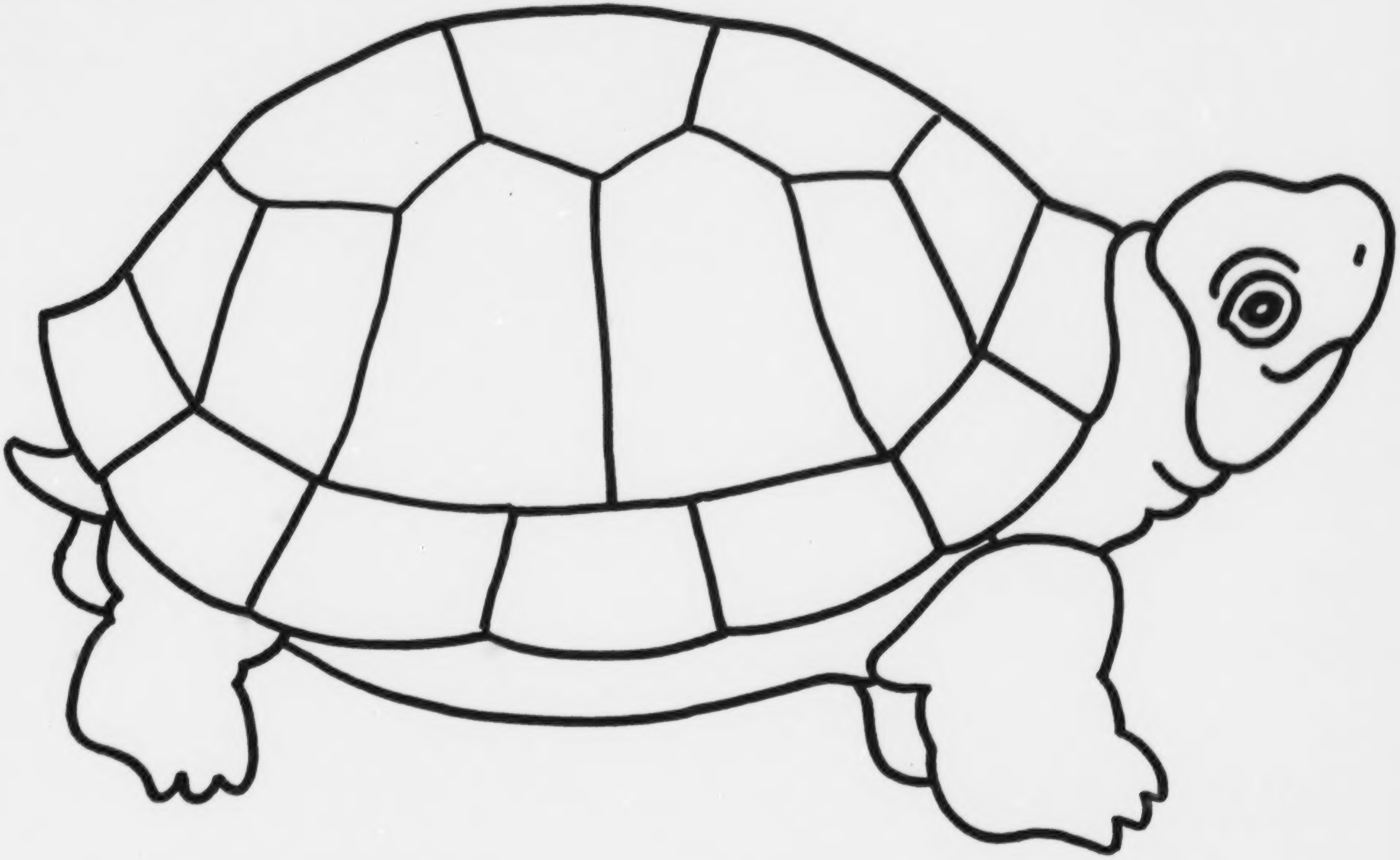

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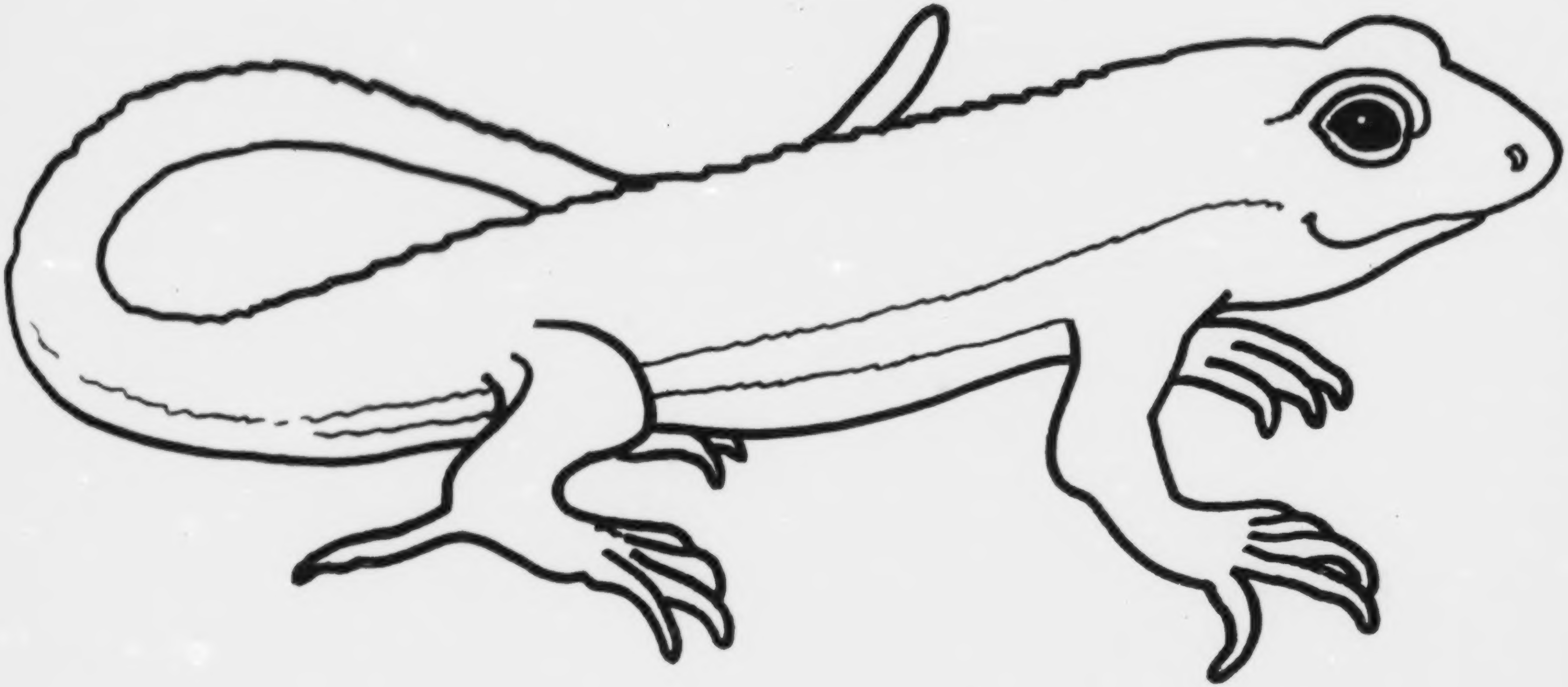

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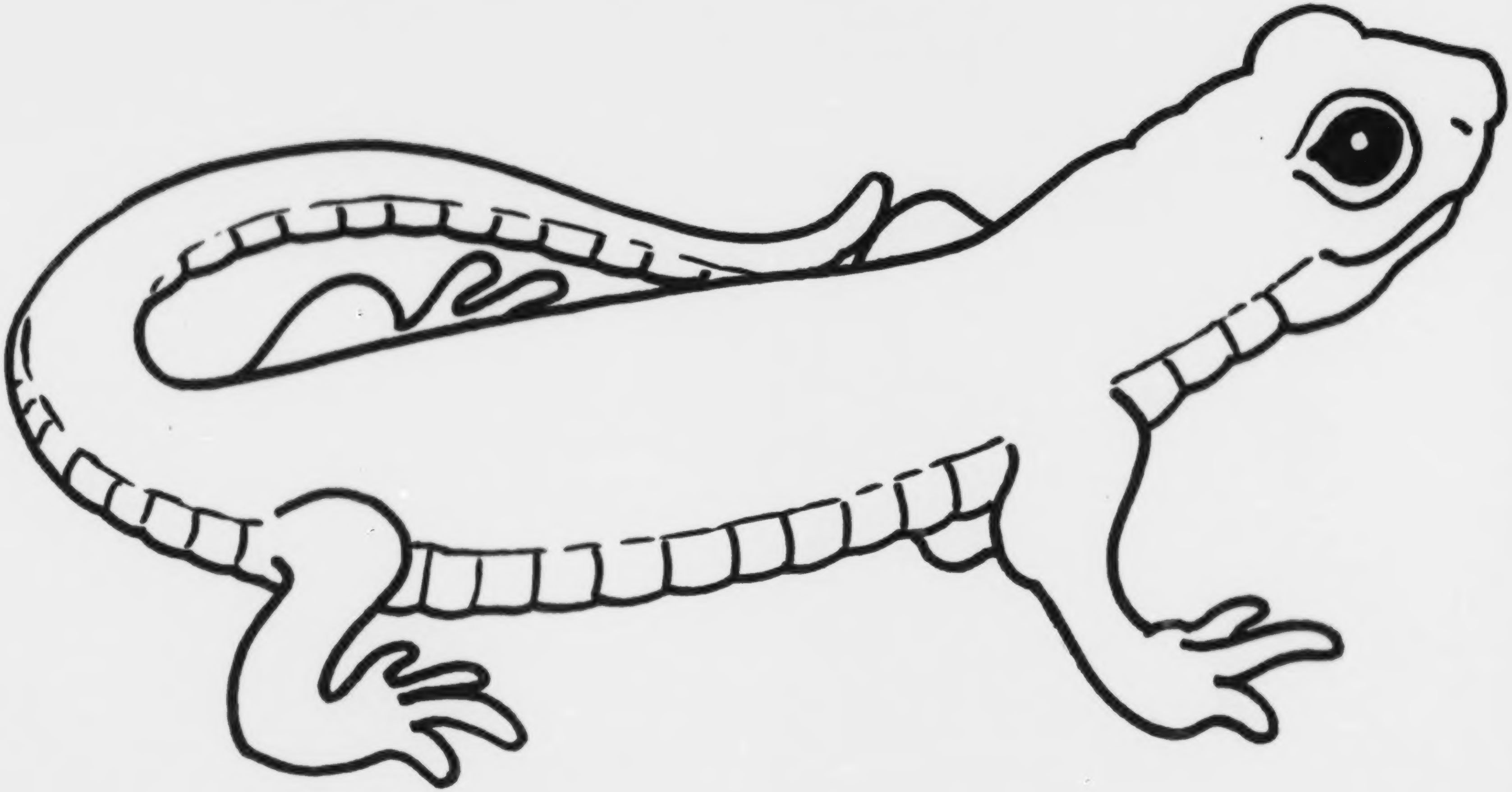

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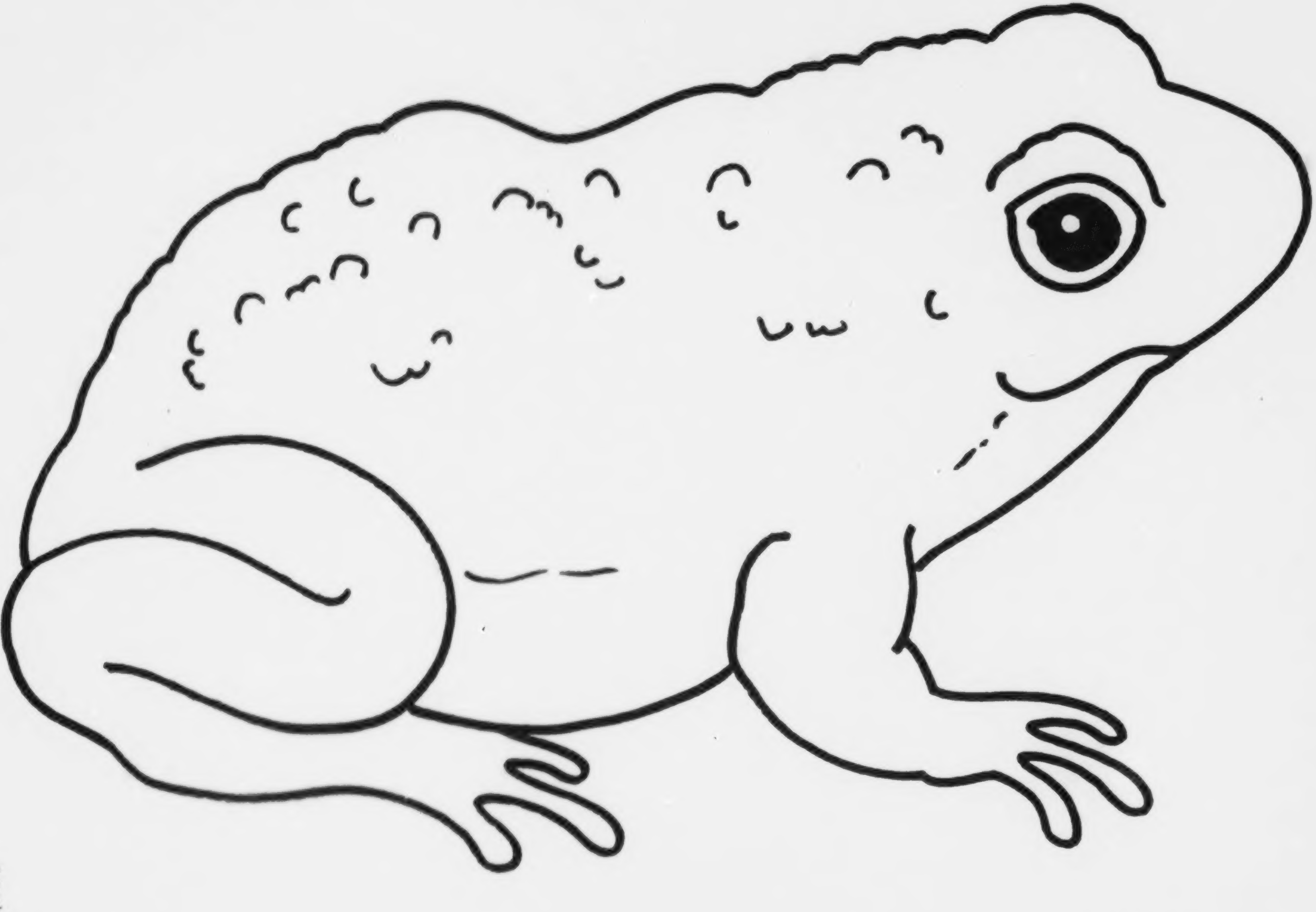

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CREEPY CRAWLIES

Three-Year-Olds

Session 2

CONCEPT: Insects have three body parts, six legs, two antennae, eyes, and sometimes wings. (Children will become familiar with the physical characteristics of insects.)

PROCEDURES:

1. Gather the children in a circle group. Open with a name fingerplay to pass out name tags/review names. Introduce the day's concept by doing a fingerplay about insect body parts.

2. Introduce the ant puppet to the children. Remind the children that last time you talked about all kinds of creepy crawlies. Tell them that today, you are going to talk about only insects. Ask the children if they know any insects. Wait for responses. Then if no one says an ant, tell the children that ants are creepy crawlies that we call insects. Discuss the ant's body parts and the fact that the ant's body has three parts or sections by showing them on the puppet. Then tell the children that you are now going to read a book about ants. Ask the children to notice the different pictures of the ants and to watch for the different parts of an ant's body as you read. Also, ask them to watch to see what new things they might learn about ants. Now, read the big book The World of Ants to the children.

3. After reading and allowing the children to talk about ants, bring out the flannel board of insect parts. Ask the children to notice the different body parts as you put them together on the flannel board. Ask the children to"help" you place the sections by offering suggestions where they think each piece should go. Also, ask the children to help you count the pieces or sections as you put them on the flannel board. Do the same with the legs and antennae. Explain that all insects have this same number of body parts (three body sections, six legs, two antennae).

4. Do a creepy crawlie fingerplay (repeat the opening concept fingerplay or select another creepy crawlie fingerplay) to resettle the group and prepare to disperse to centers. Once attention is regained, explain the center options available for that day. After you have explained the centers, ask the children to choose where they would like to go. As they choose, send them on their way. Allow the children to freely play and choose another center as they finish each task. Be sure to float from center to center and interact with the children as they play to reinforce the concepts for the day. Play music from the record Insects, Bugs, and Squiggly Things while children are in the centers. The center options today are:

A. Provide commercial insect displays at a center for children to observe. Remind the adult monitoring this center to ask the children if they can see the different sections of the insects. Also, remind the children to count the sections of the insects. Ask the children what other things they notice about the insects. Are there things that are alike and things that are different about the insects? Allow 3-4 children at this center.

B. Provide 4 buckets of sand with small plastic ants hidden in the sand, and 2 metal strainers per bucket out at a center. Let children use the strainers to sift through the sand to search for the ants. Talk to children about spotting ant homes outside. Ask the children if they've ever seen an ant home outside. Suggest that the children see if they can make an ant mound with the sand. Have the children count the ants that they find. Then, let children choose a number of ants to hide in the bucket for a friend to find. Allow 2 children at each bucket of sand.

C. Provide a variety of insect puzzles at a center. Discuss with the children the similarities between the insects on the puzzles. Once again, try to help the children notice the different sections. Allow 3-4 children at this center.

D. Provide Cooties out at a center for children to play with. Reinforce the numbers of different body parts that the Cooties and all insects have as the children put the Cooties together. For further reinforcement, ask the children to hand you a certain number of Cooties, or ask them to tell you the colors of the different Cooties. Allow 4 children at this center.

E. Set up the flannel board at a center so the children can play with the flannel board insect. Let the children put the insect together. Ask questions about the different body parts. Let the children help count parts again. Allow 2 children at this center.

F. Provide factual books on ants and other insects at a center. Let children read the books. Help the children to notice the similarities between all the insects shown. Also, talk about insect homes. Read books to the children at their request. Allow 3-4 children at this center.

G. Provide some insect puppets (ant, firefly) for the children to play with. Encourage them to make up stories, ask questions like: what if, or one day the ant came along and met the firefly, what happened next. Allow 2-3 children at this center.

H. Provide stamp pad and bug stamps for children to stamp out their own bug creations. Give them ideas, like making bug families or a class of bugs. Encourage them to be creative. Once they have begun stamping some bugs, ask questions like: "How many bugs are there?," " How many of this kind did you stamp?," " Which ones are alike?" Allow 2-3 children at this center.

5. Two minutes before you are ready for the children to clean up turn out the lights and make an announcement to warn them to begin finishing up whatever they are working on. After two minutes, turn out lights again and ask the children to clean up. Call children back to the group circle with a song. Allow each child to share one thing they learned or played with during center time.

6. Close with the flannel board insect. Take the insect apart with the children and have them identify and count the parts as you go.

7. Sing a good-bye song with a puppet. Let the children hug and kiss the puppet good-bye.

RESOURCE KIT:

1. Suggest the classroom teacher collect some real ants to be placed in bug boxes left last time for observation.

2. Provide some plastic ants to put in the sand table. Use for counting activities too.

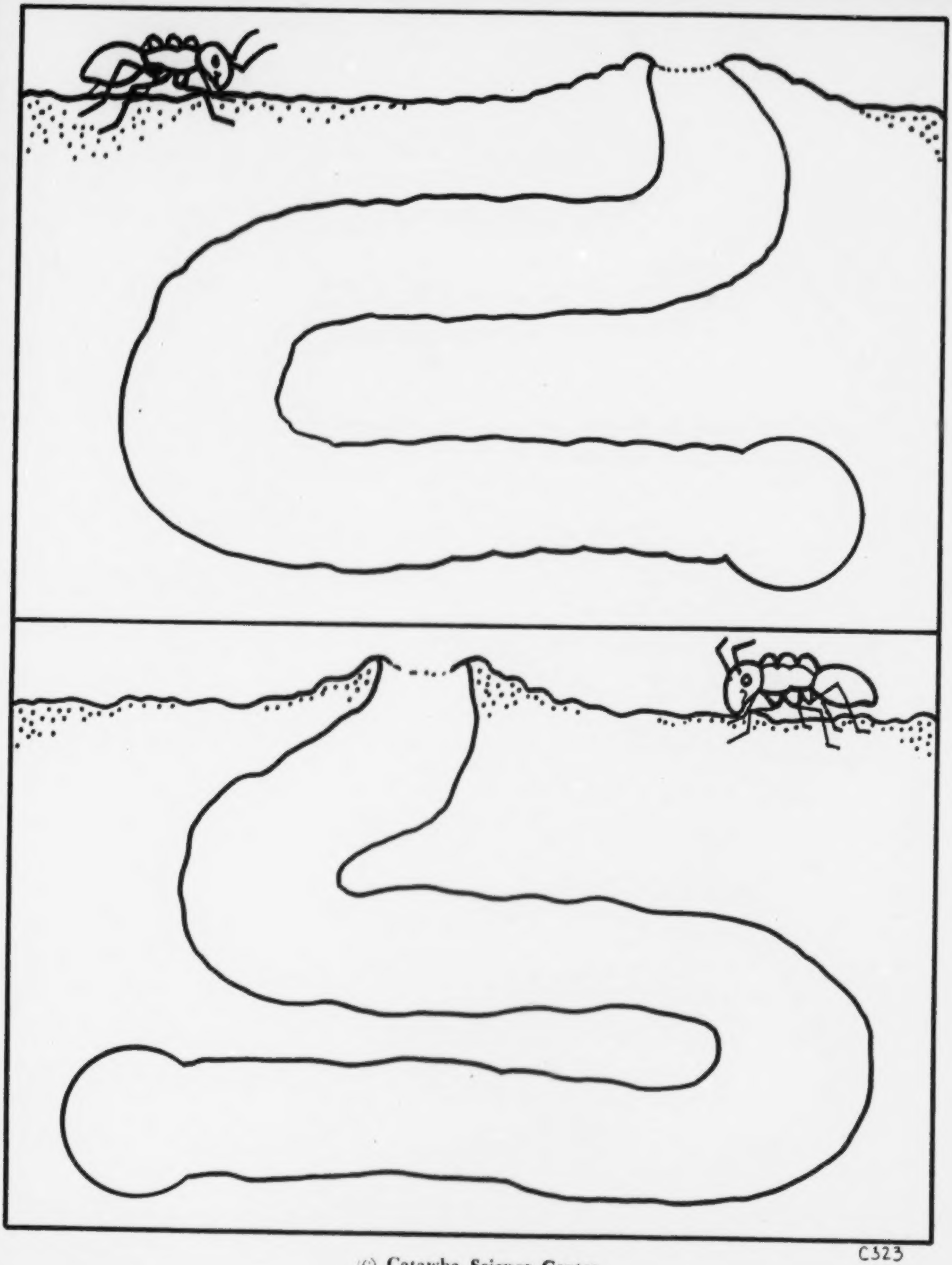
3. Use the patterns of the pictures of ant colonies numbered 1-6 to count plastic ants into.

4. Use the patterns to make insect puzzles with three body parts to them.

5. Use the patterns to make an insect body parts flannel board set.

6. Use the patterns to make a game board that resembles ant tunnels and spinner. Spin to see how many spaces to move.

7. Use the patterns to make recipe cards for Ants-On-a-Log for snack.



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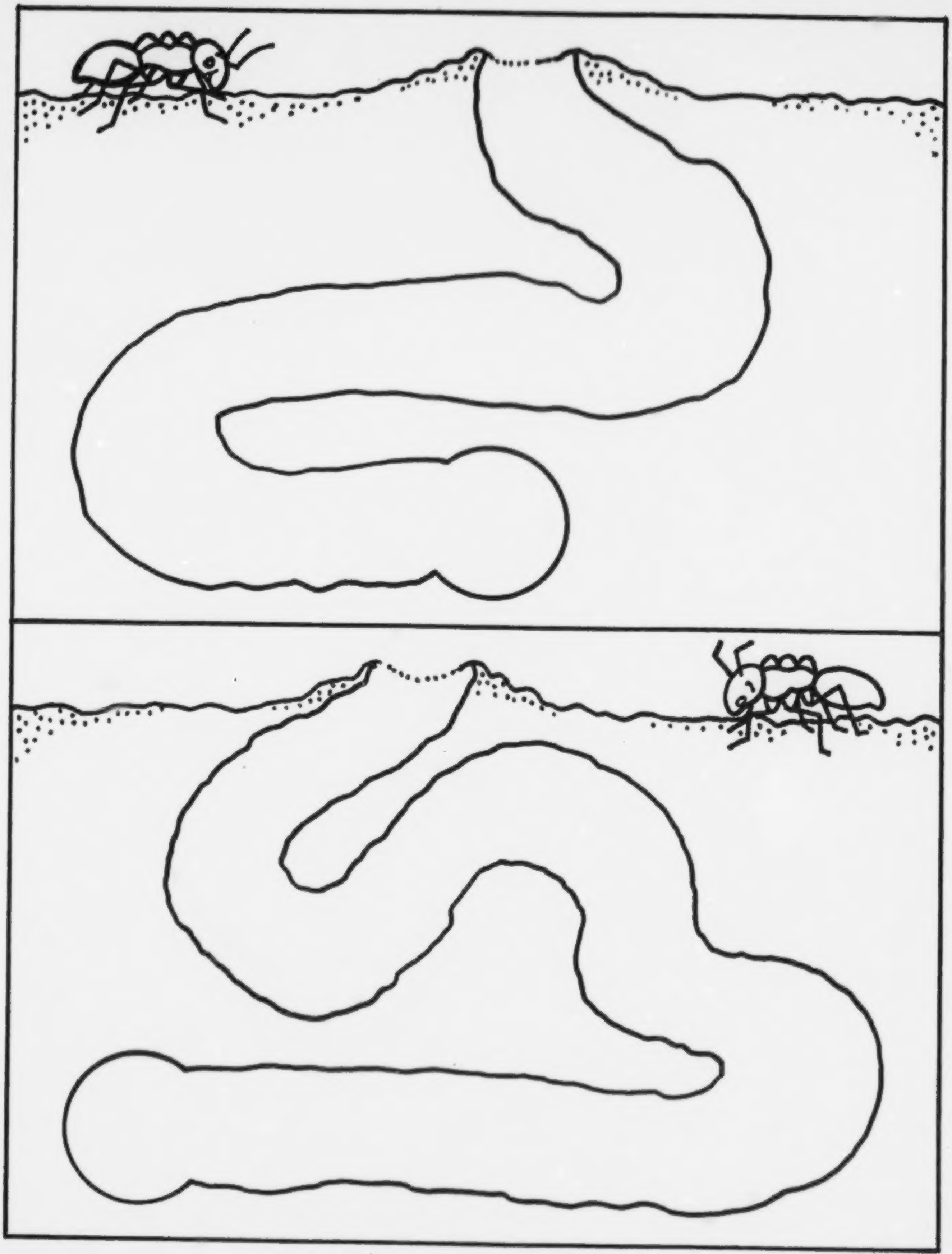

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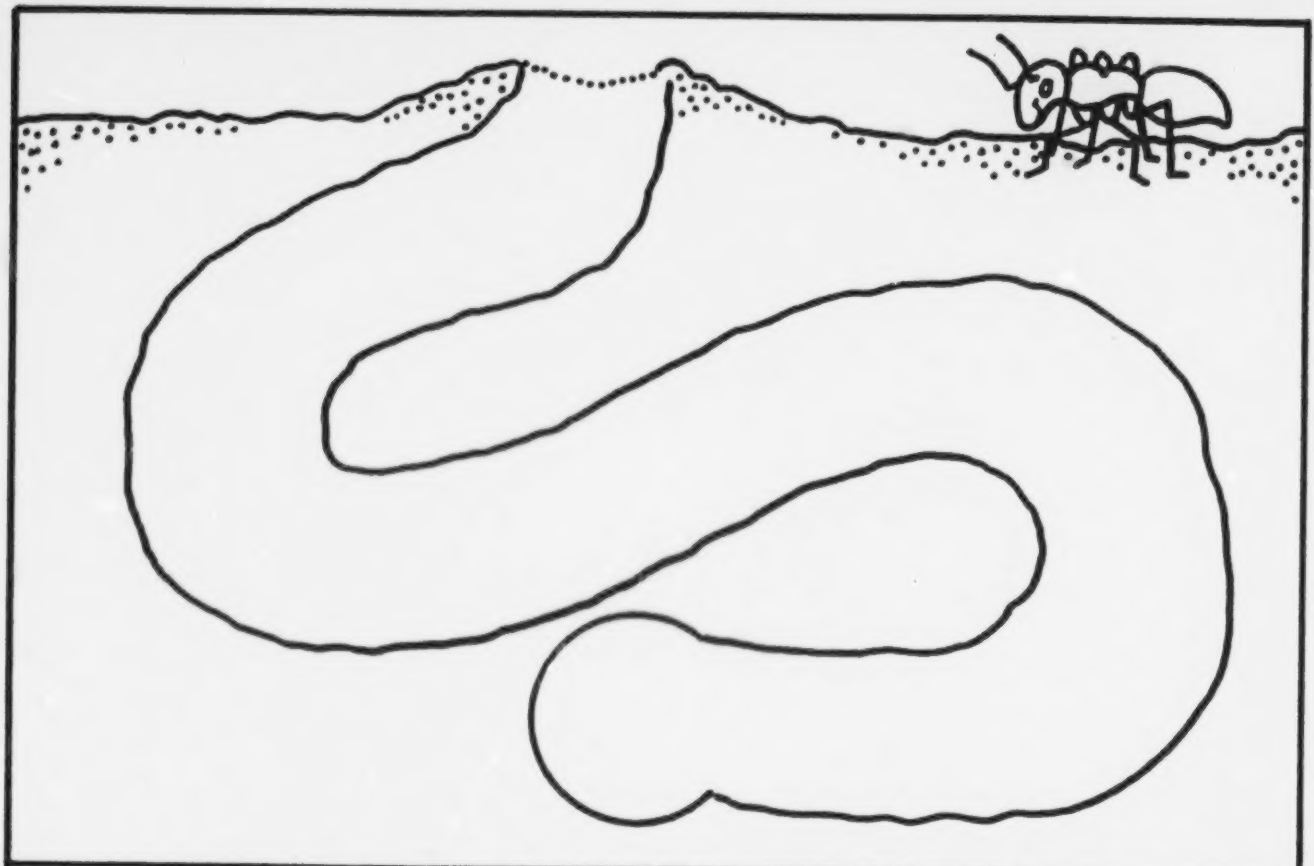

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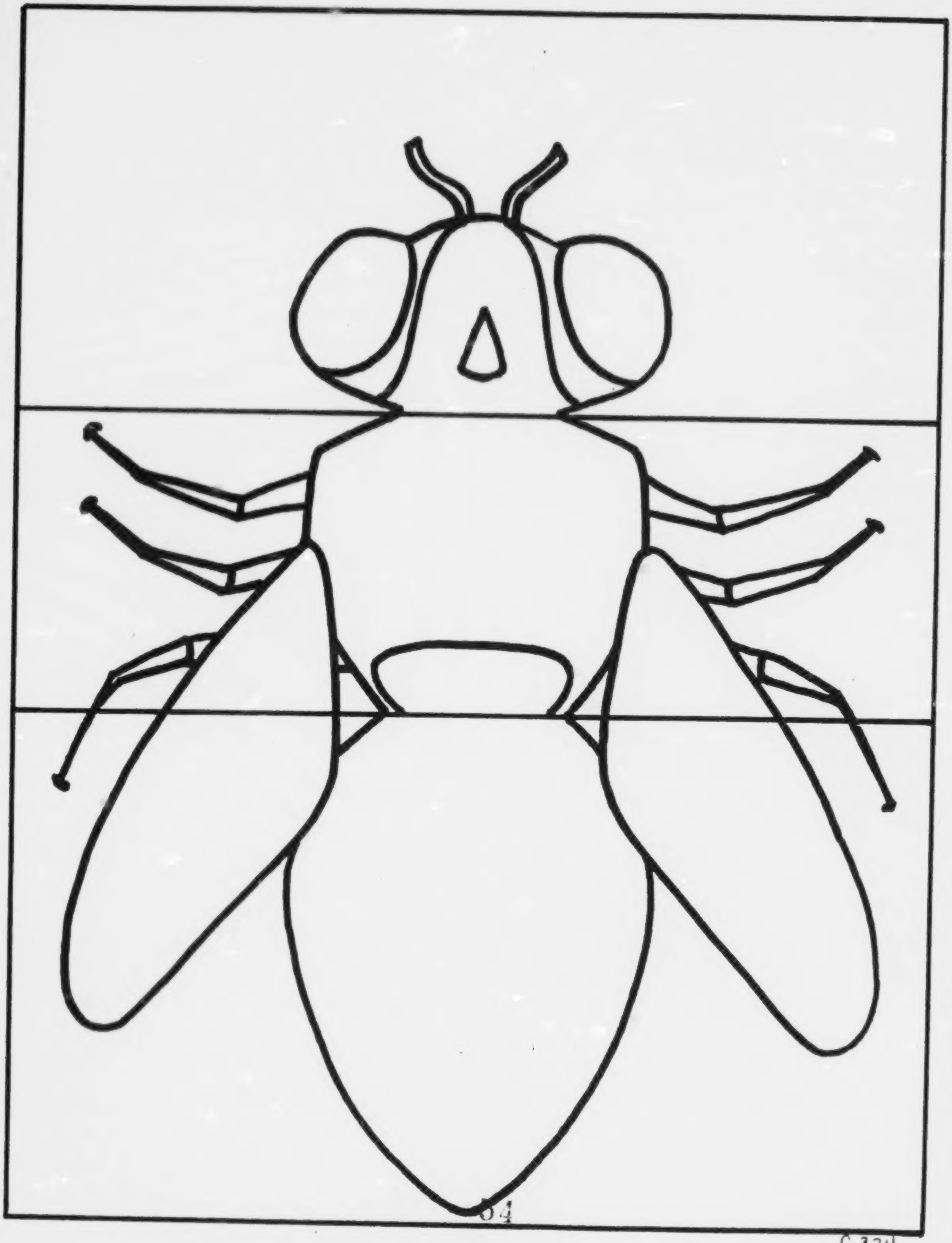

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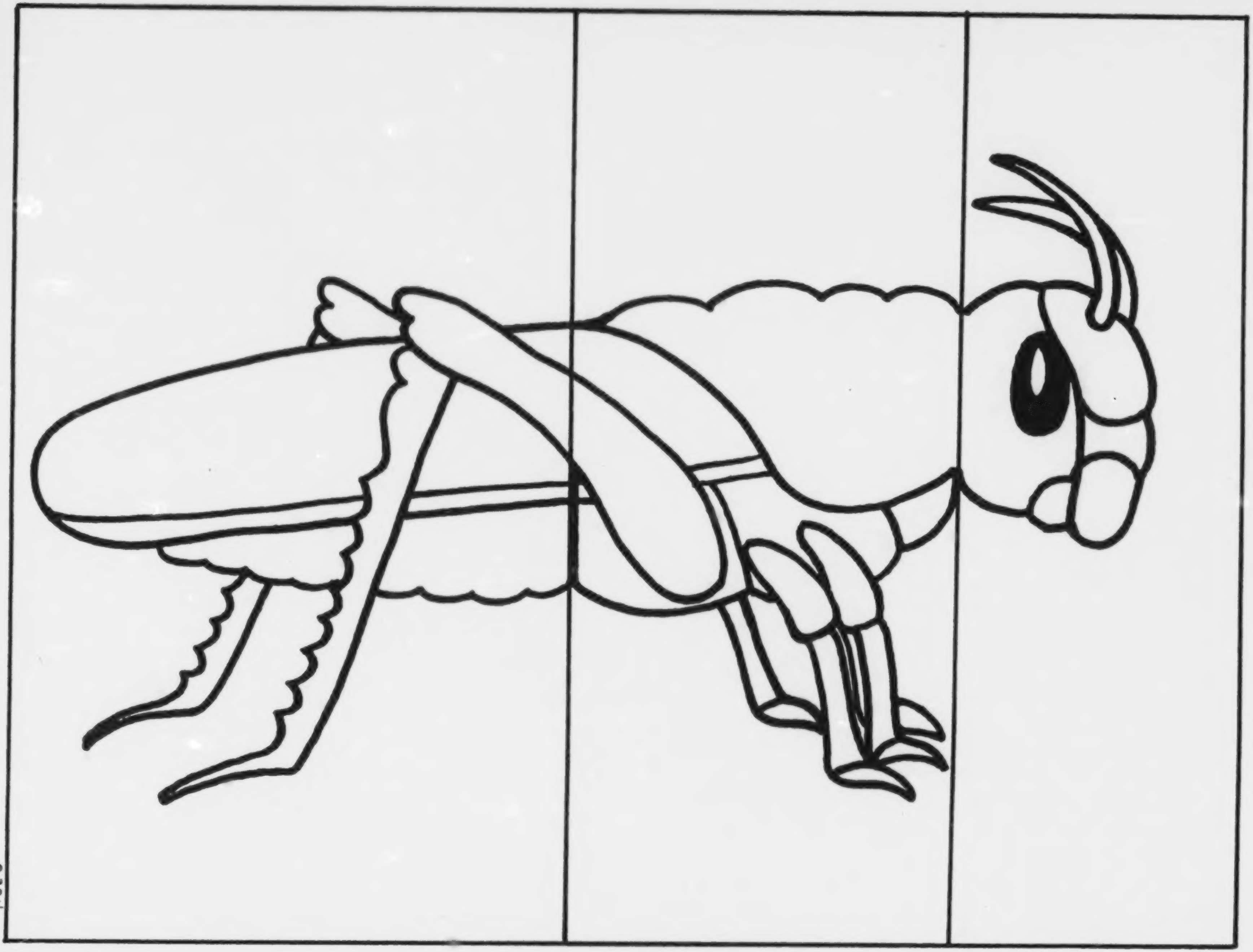

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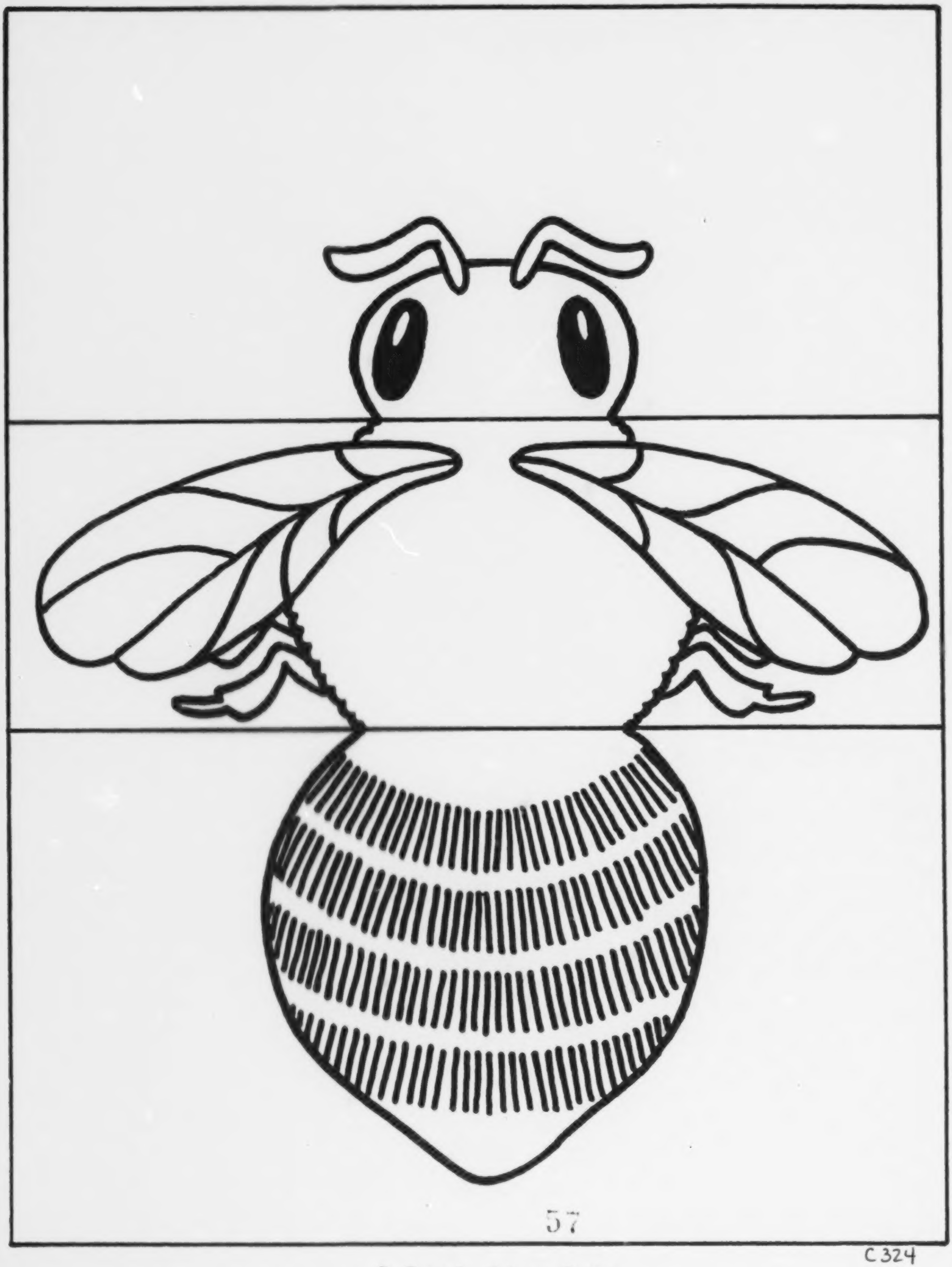

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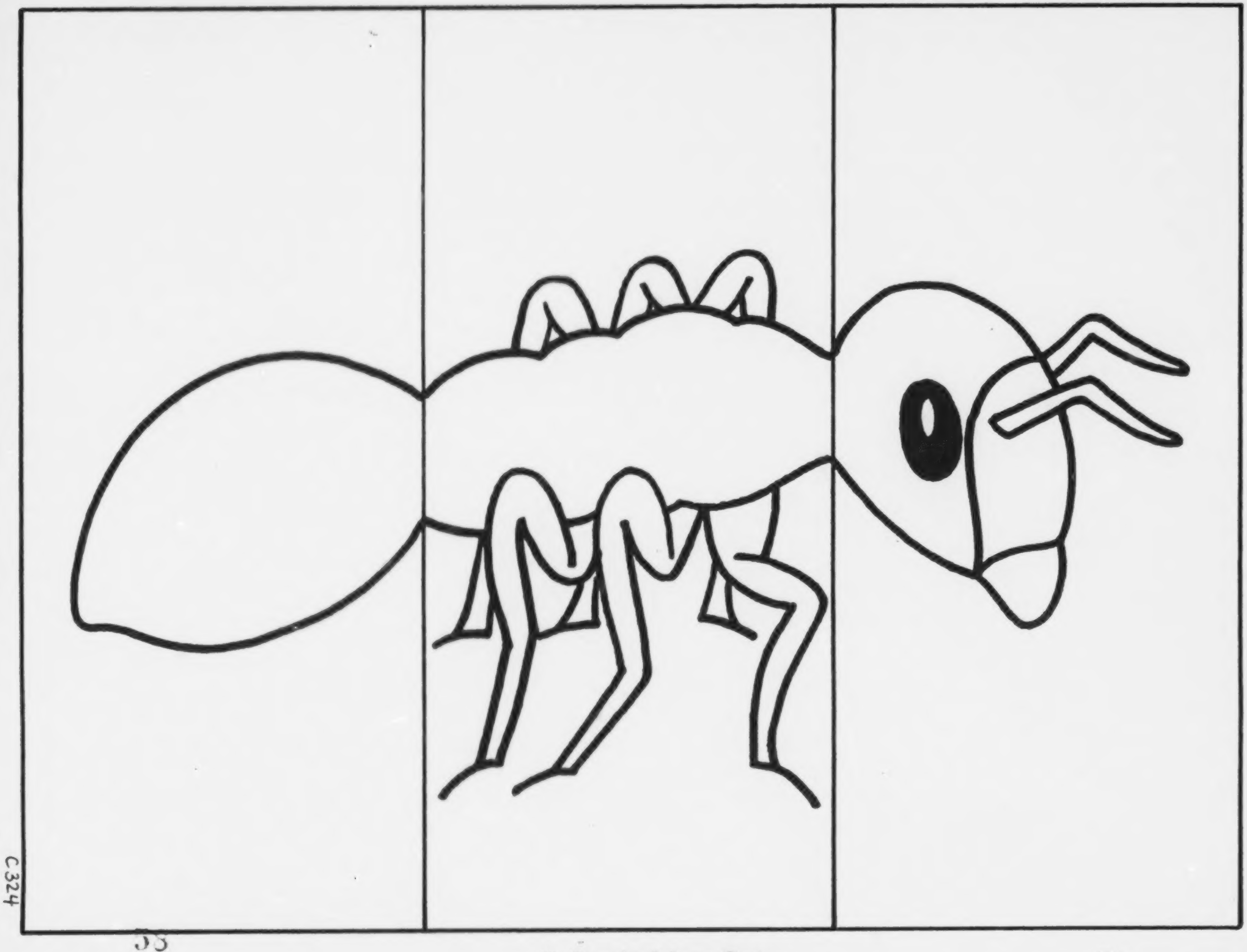

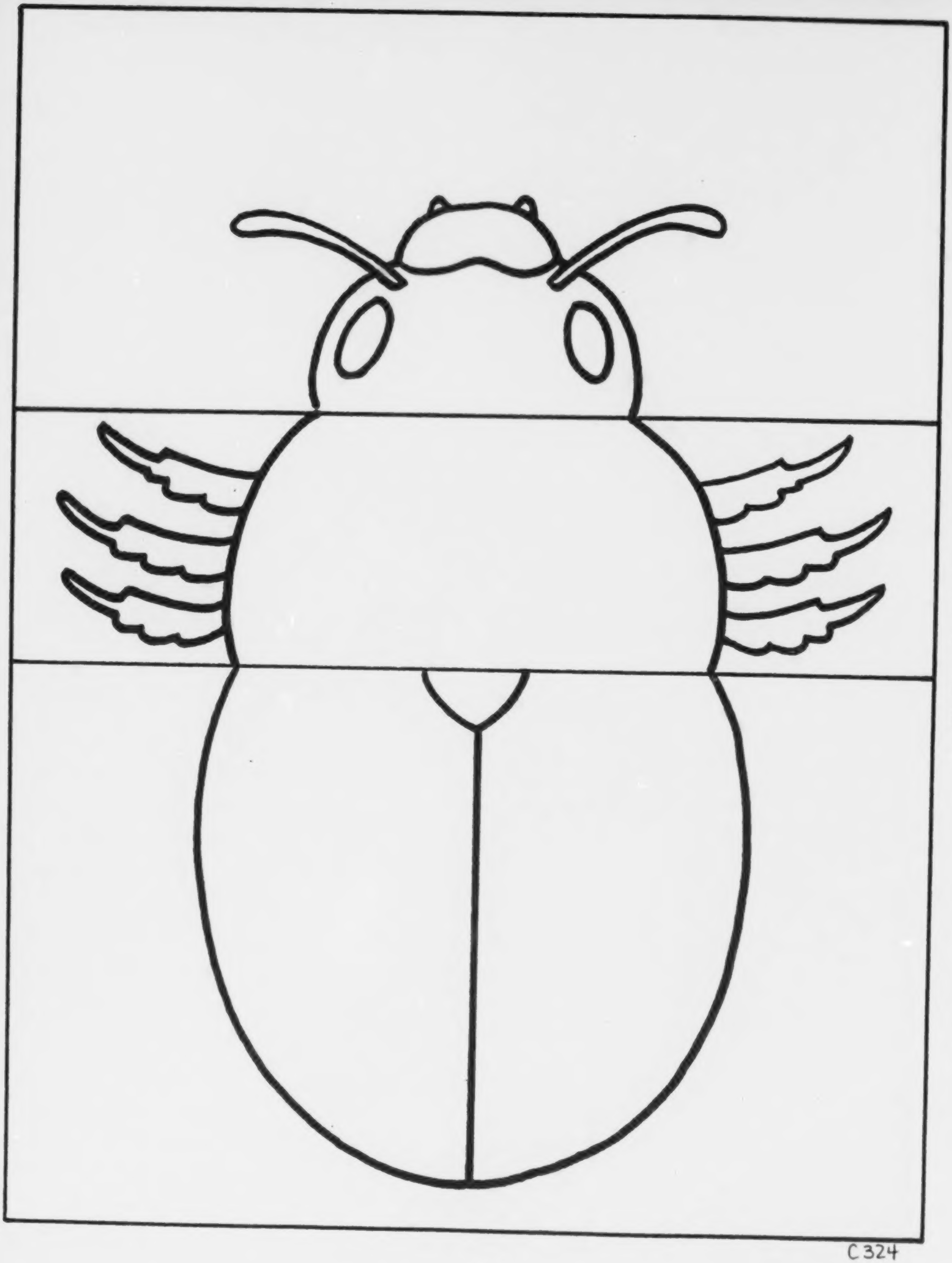

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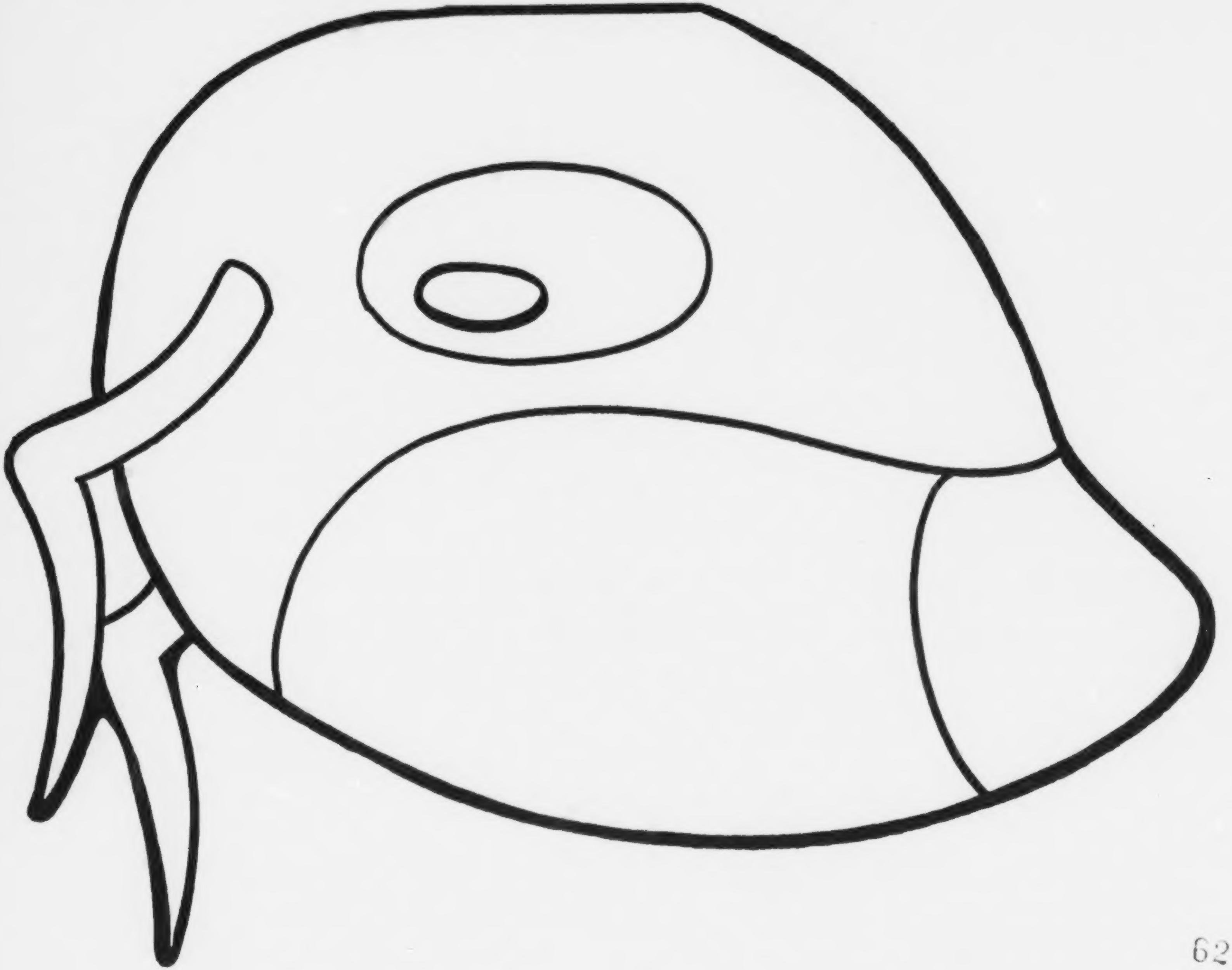

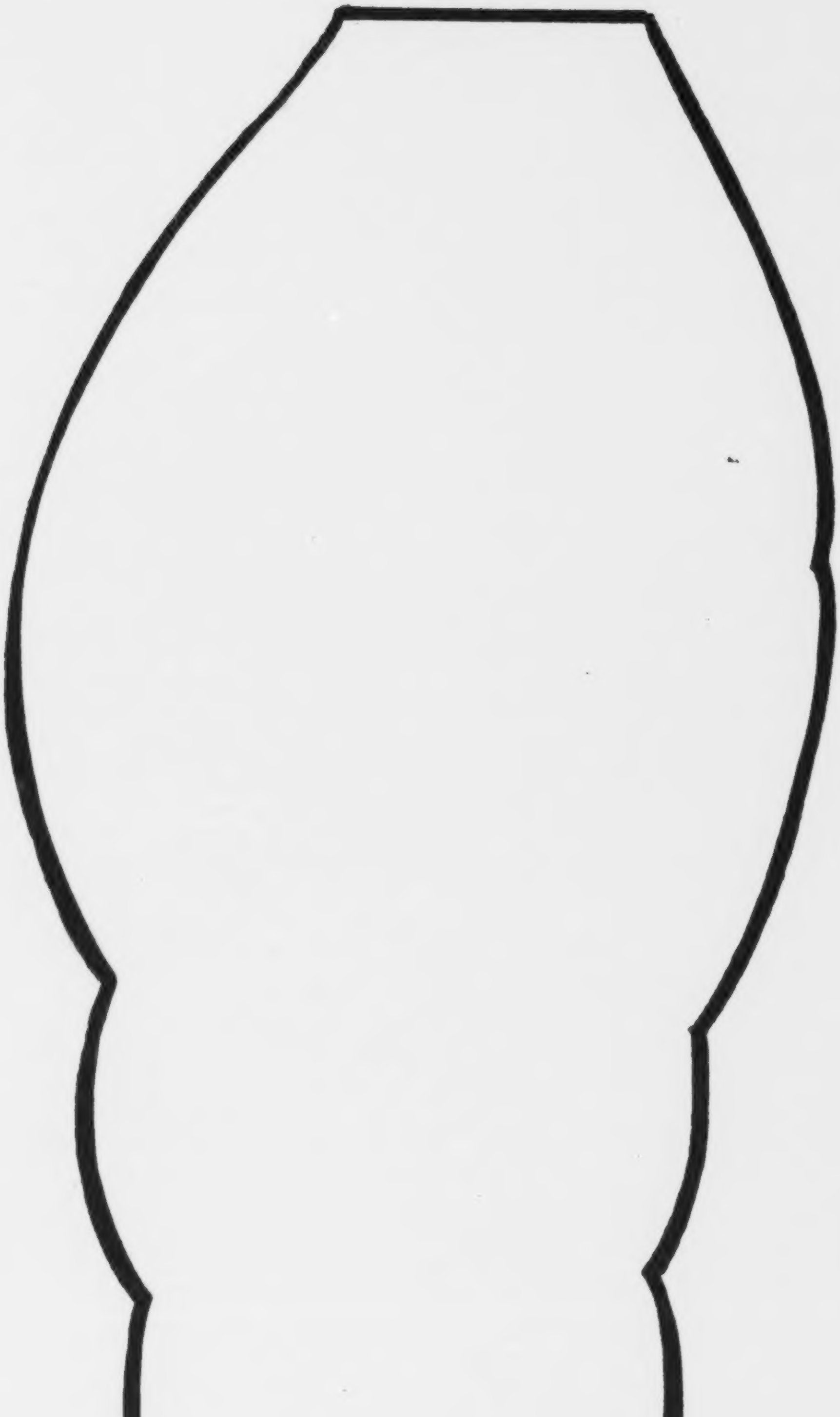

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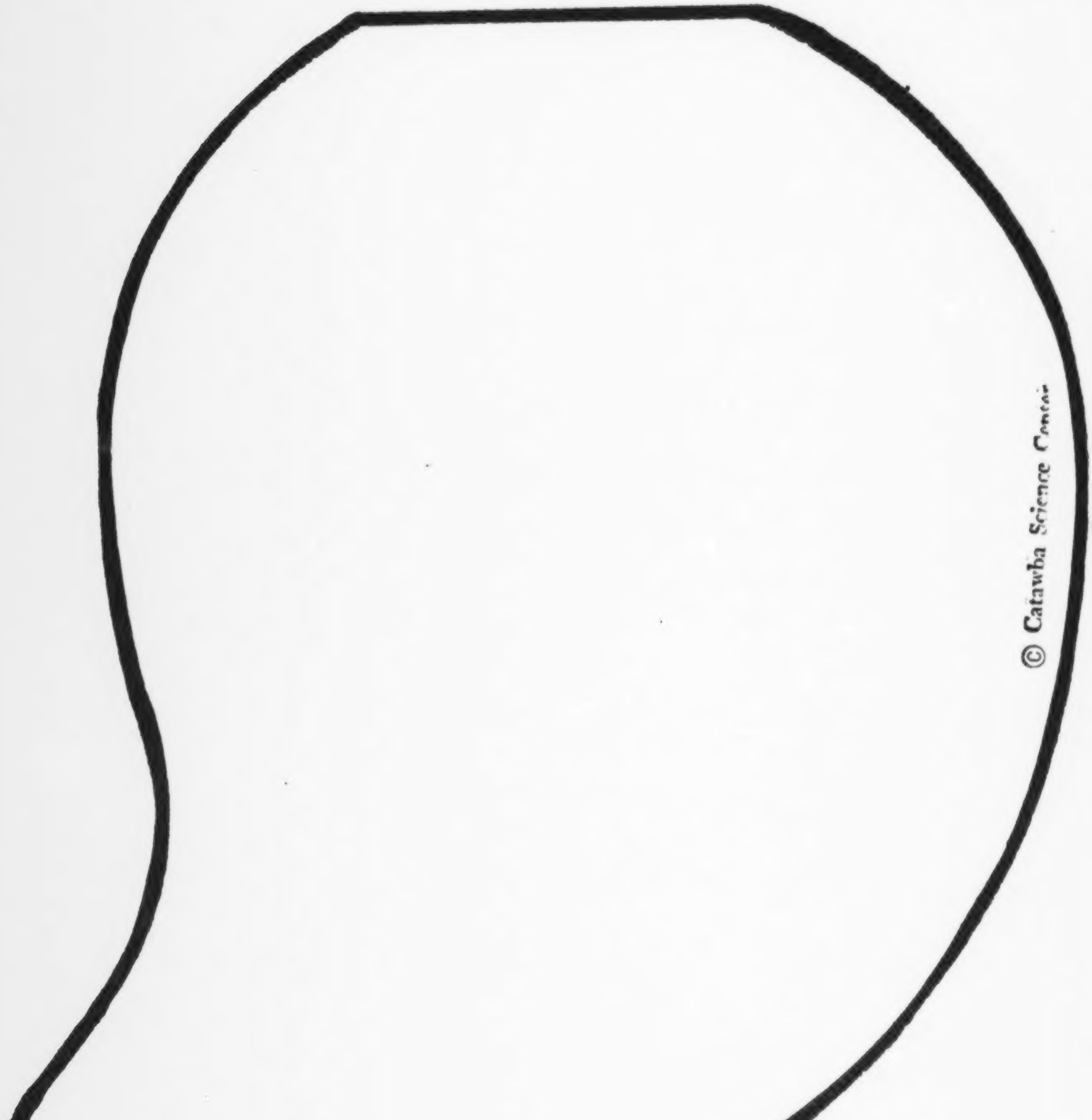

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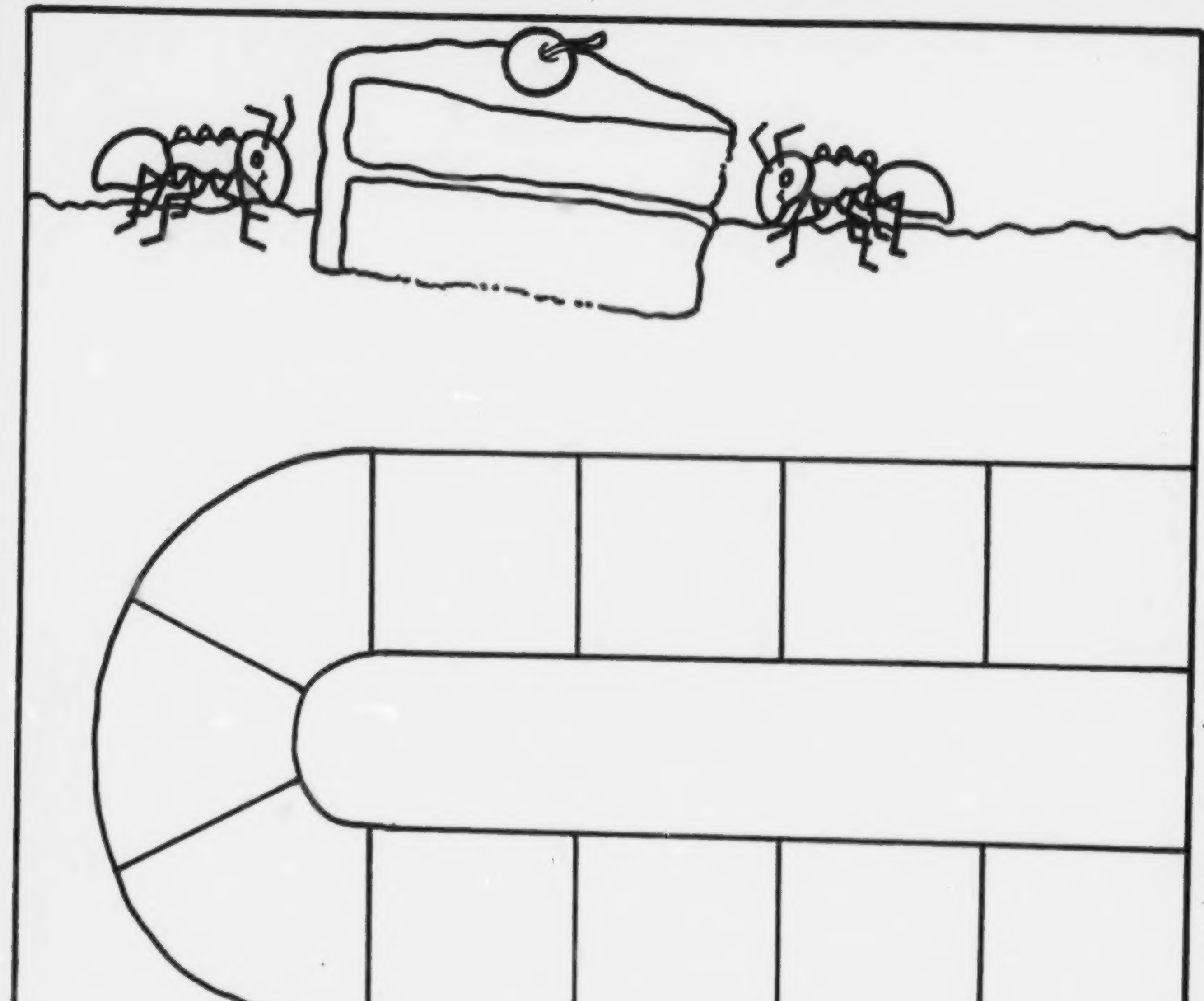

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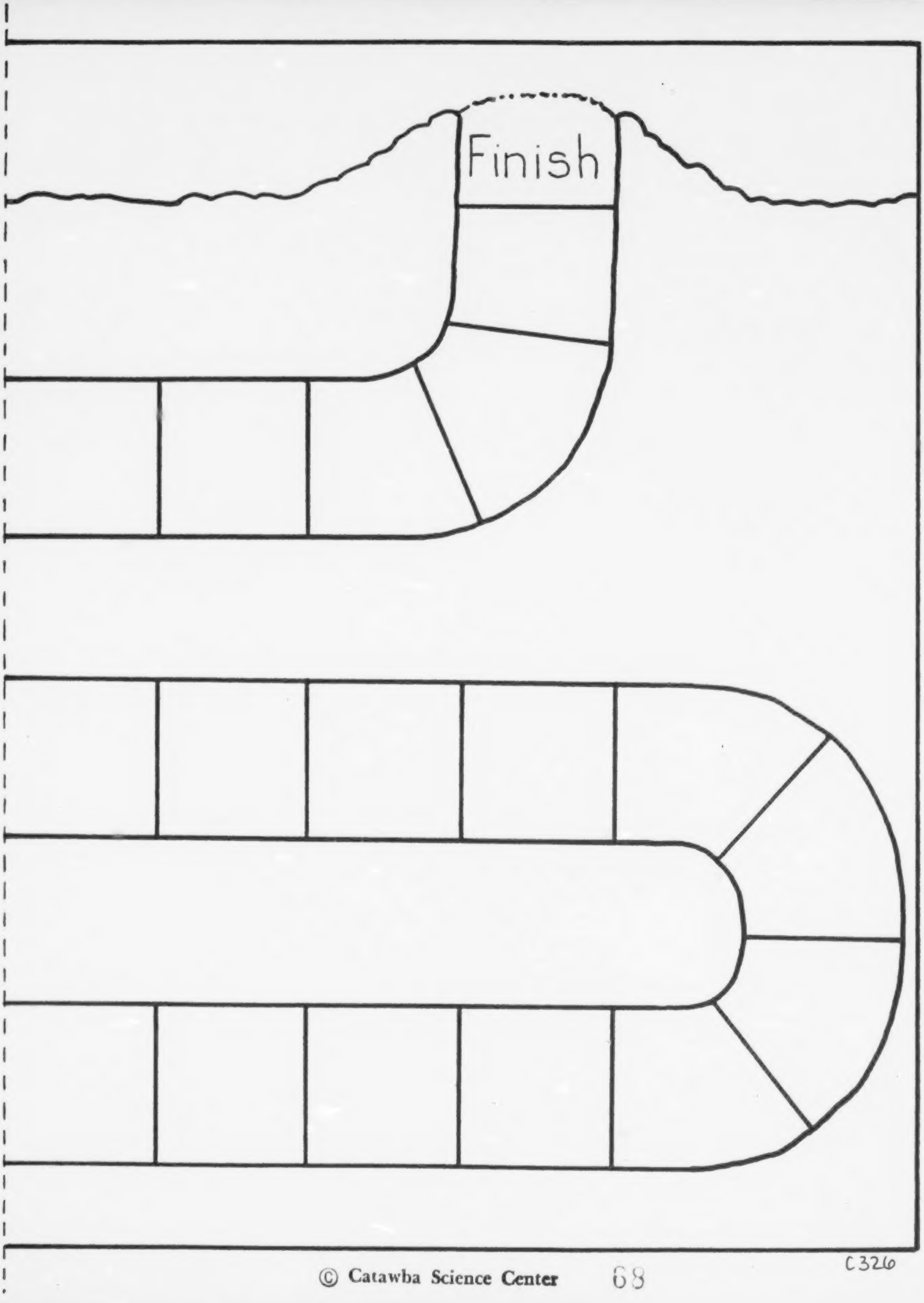

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Make Ants on a Log.

You will need:

celery

peanut butter

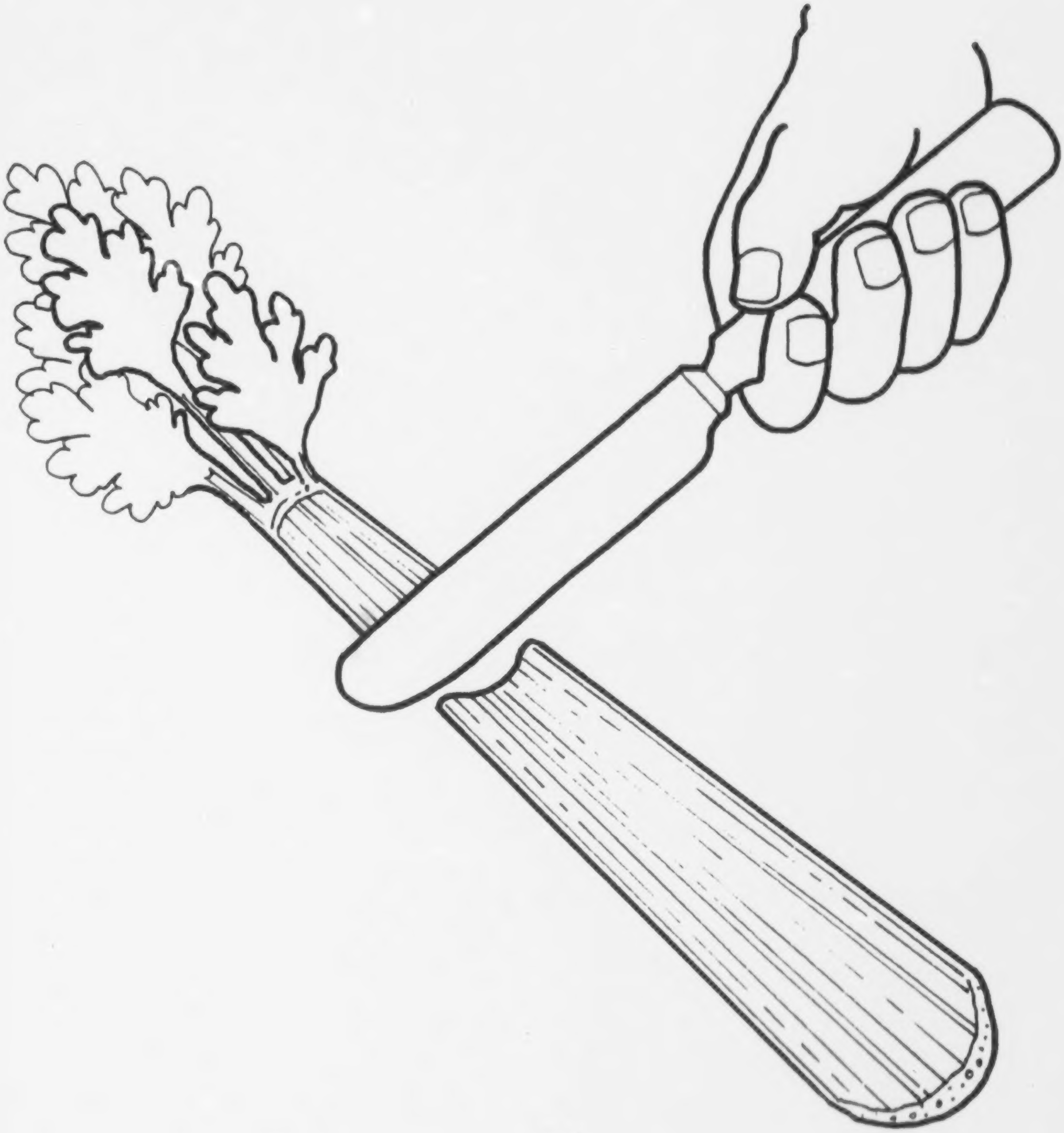
raisins

knife

Wash hands.

C 327

Cut celery.



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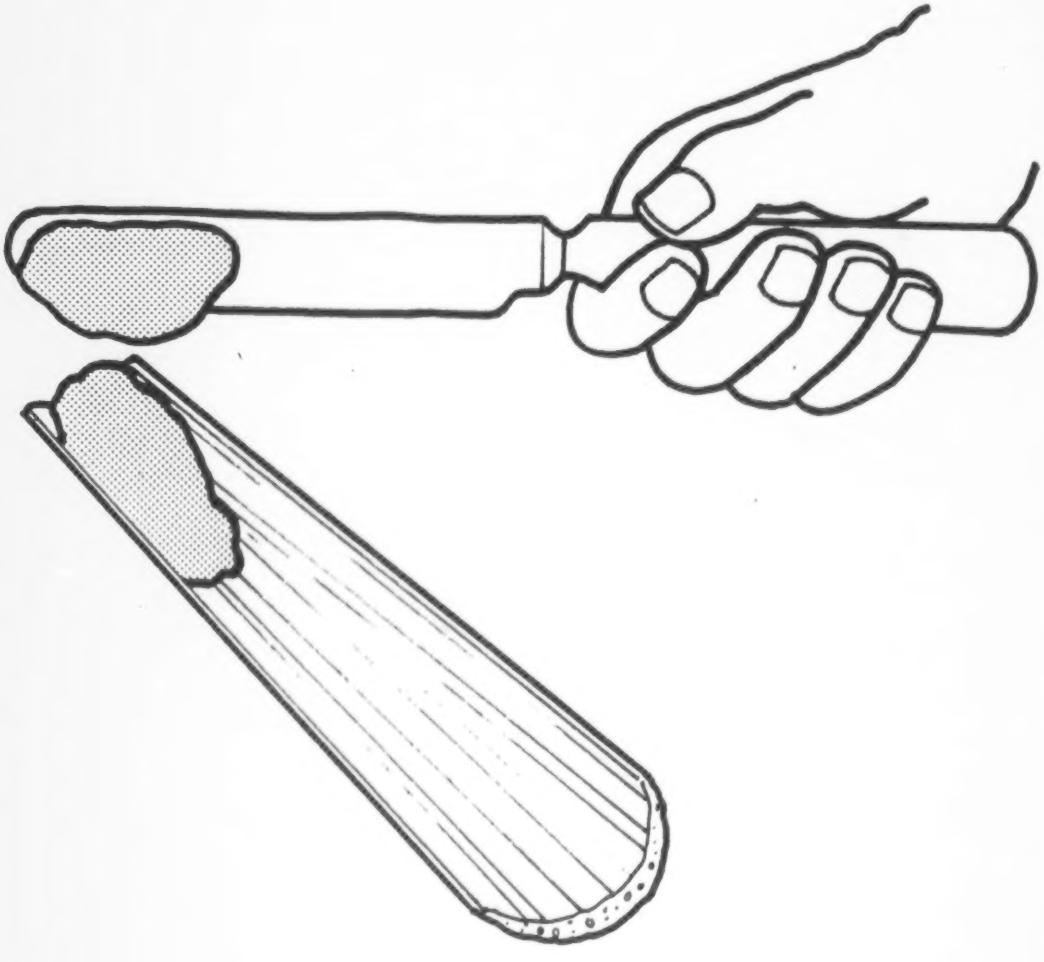
Add peanut butter.



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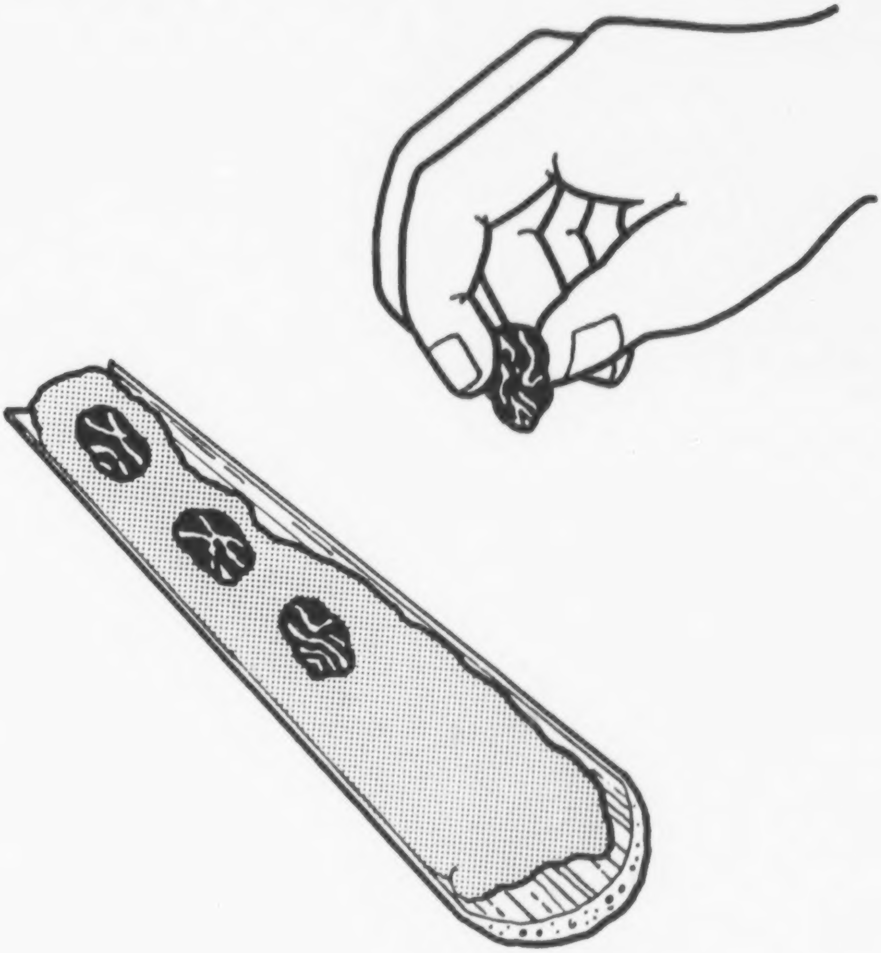


C327

CREEPY CRAWLIES

Three-Year-Olds

Session 3

CONCEPT: Creepy crawlies change. (Children will become familiar with metamorphosis and how a caterpillar transforms into a butterfly.)

PROCEDURES:

1. Gather the children in a circle group. Open with a name fingerplay to distribute name tags/review names. Introduce the concept of change with fingerplay about growing and changing.

2. Show children a sequence puzzle about humans growing up. Talk with the children about how people change from babies to children to elderly people. Ask children to talk about the different stages and what things change as we go through the different stages.

3. Bring out a flannel board set of animal life cycles. Use the life cycle of the guinea pig to show how animals also change as they grow. Have children notice the different changes in each stage and talk about what they think is happening. Encourage comparisons of different stages of the guinea pig's life to our own lives.

4. Mention that some live creatures change a great deal as they grow. Read The Very Hungry Caterpillar. Talk with the children about how the caterpillar changed from day to day. Introduce the word metamorphosis. Tell children that metamorphosis is a big word that means change. Ask the children to notice what is happening during the metamorphosis or change.

5. Review how the caterpillar changes using a caterpillar/butterfly puppet (this puppet changes from a caterpillar to a butterfly). Let the children help retell the story of The Very Hungry Caterpillar in their own words. Help them sequence it. Start by asking what happened first, and keep using key words like next and then.

6. Let children pretend they are caterpillars and act out the fingerplay about changing into a butterfly. Make sure you participate also.

7. Review the life cycle of the butterfly one more time by using the flannel board life cycle of the butterfly. Let children tell you the sequence of the cycle and where to put up each picture. Remind the children to think back to how we discussed the butterfly's metamorphosis or change earlier. Help once again with cue words like: first, second, next, and last.

8. Show the children a butterfly display of real preserved butterflies. Talk about the color of their wings and how the colors are the same on both halves of the butterfly. You could use an unbreakable mirror here to introduce symmetry by holding the mirror perpendicular to the center of a picture or half of a child's face to show how what is in the mirror is the exact same on both sides.

9. Show the children the butterfly garden and the live larva. Tell them that you are leaving those behind so that the class can see how butterflies hatch from the cocoons. Remind the children that it will take some time, and to try and remember the different stages that we talked about as they observe the metamorphosis or change that occurs.

10. Do a butterfly fingerplay (repeat the opening concept fingerplay or select another creepy crawlie fingerplay) to resettle the group and prepare to disperse to centers. Once attention is regained, explain the center options available for that day. After you have explained the centers, ask the children to choose where they would like to go. As they choose, send them on their way. Allow the children to freely play and choose another center as they finish each task. Be sure to float from center to center and interact with the children as they play to reinforce the concepts for the day. Play music from the record Insects, Bugs, and Squiggly Things while children are in the centers. The center options today are:

A. Provide the preserved butterfly displays in a center with magnifying glasses so that the children are free to observe. Ask children to find the butterflies' body parts. Talk about the symmetry again. Pull out the mirrors here along with some pictures so that the children can explore symmetry as it occurs. Ask children what colors they can find on the butterflies. Allow 2-3 children at this center.

B. Let the children use the flannel board life cycle to put the metamorphosis of the butterfly into the correct sequence. Talk about similarities and differences between the changes a butterfly undergoes and the changes a person goes through as he grows. Allow 2-3 children at this center.

C. Provide both fiction story books and factual books about butterflies and moths for children to read. Ask children questions about metamorphosis. Talk about differences between butterflies and moths. Read books to children at their request. Allow 2-3 children at this center.

D. Provide puzzles of butterflies that illustrate metamorphosis and symmetry. Talk to children about these concepts. Allow 2-3 children at this center.

E. Provide pictures of butterflies and moths cutout from posters for a matching game. Talk to children about how they matched each one. Ask the children to tell you the things that either made them match the pictures together or not match the pictures together. Allow 2-3 children at this center.

F. Provide butterfly pictures cut in half and provide unbreakable mirrors that children can use to create the missing half of the butterfly. Show the children how to hold the mirrors perpendicular to show symmetry in pictures. Also allow the children to explore other things that could demonstrate symmetry. Talk to children about the symmetry again. Allow 2-3 children at this center.

11. Two minutes before you are ready for the children to clean up turn out the lights and make an announcement to warn them to begin finishing up whatever they are working on. After two minutes, turn out lights again and ask the children to clean up. Call children back to the group circle with a song. Allow each child to share one thing they learned or played with during center time. Read Monarch Butterfly. Remind children to watch for symmetry in the butterflies, and to also watch for body parts and colors.

12. Close with the butterfly garden and review what is in the garden and what will happen. Put the life cycle butterfly flannel board together as you review the sequence of the story.

13. Use the puppet to help sing a good-bye song and collect name tags from children. Let children hug and kiss puppet good-bye.

RESOURCE KIT:

1. Leave behind a butterfly garden in each classroom for the children to observe.

2. Use the patterns to make cards that picture metamorphosis of caterpillar to butterfly for children to sequence.

3. Use the patterns and provide stickers with pictures of a variety of butterflies for the children to match.

4. Provide a poster with pictures of butterflies. Cut out all the butterflies and cut them in half. Provide mirrors to play with symmetry and complete the half butterflies or use the halves as puzzles.

5. Use the patterns to make a lotto game that includes butterflies and caterpillars for children to match.

6. Use the patterns of butterfly and caterpillar shapes for children to practice patterning.

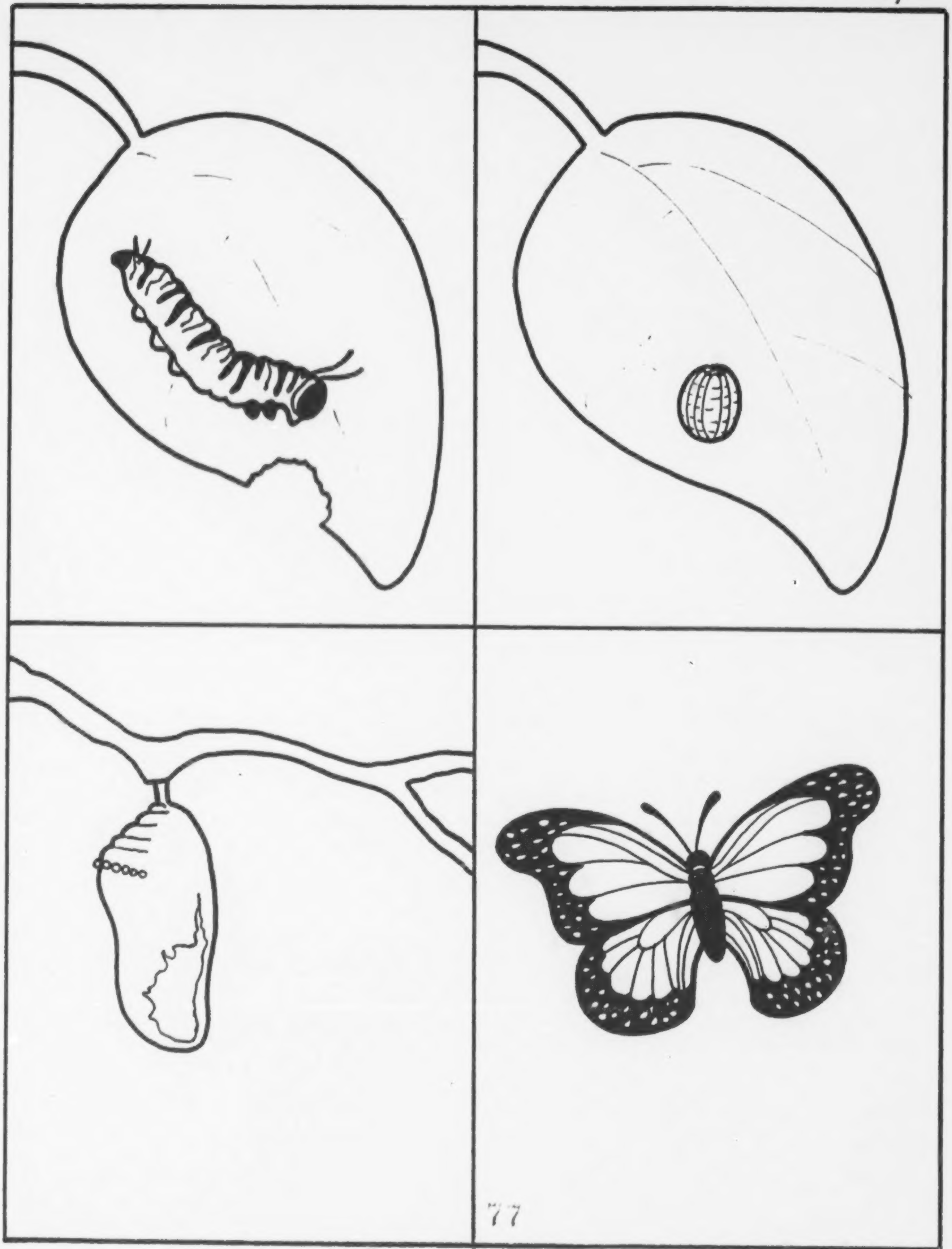
7. Suggest that the classroom teacher provide pillowcases for children to hide in as caterpillars and come out as butterflies.

8. Suggest that the classroom teacher provide butterfly shaped note pads for the children to decorate at the art center any way they please.

9. Suggest an art project: Make butterflies by cutting paper into butterfly-wing shape, crease in half then open, squeeze several drops of paint onto crease, fold in half again and press paint all over. Open to see the butterfly.

10. Suggest that the classroom teacher provide butterfly stickers for children to use at the art table. Teachers may also make matching games and counting/number games.

Monarch Butterfly



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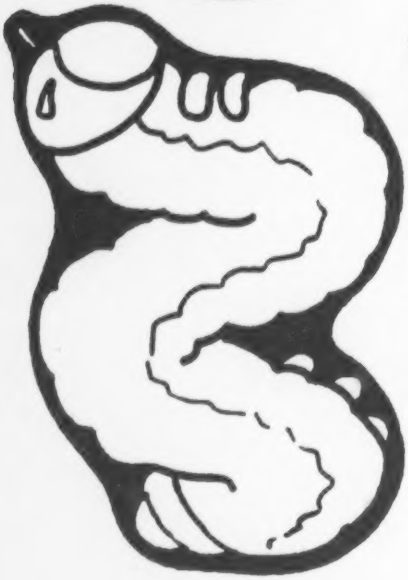

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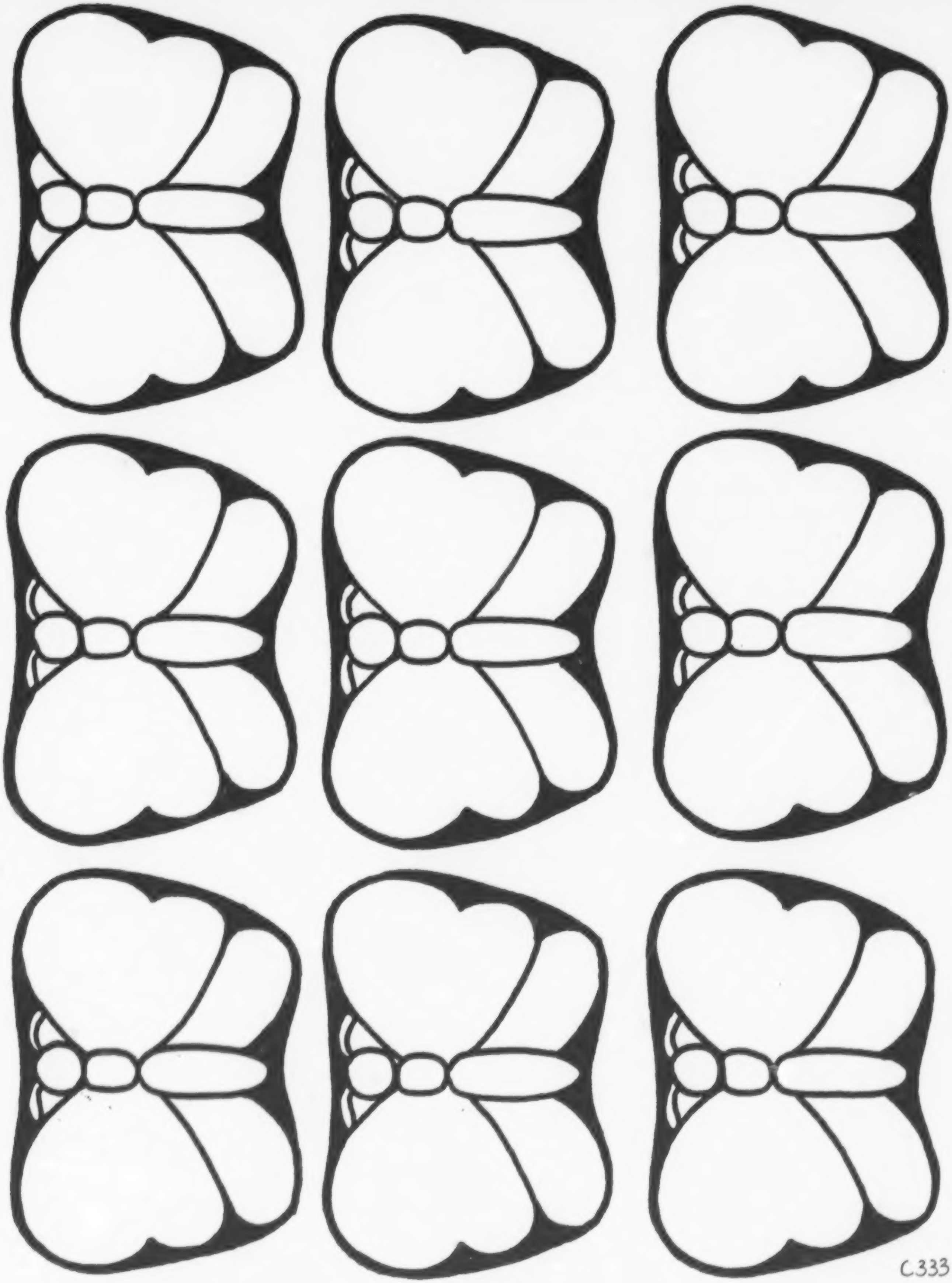

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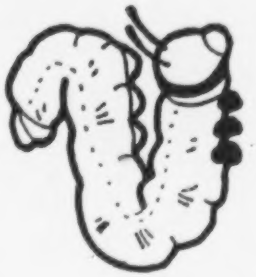

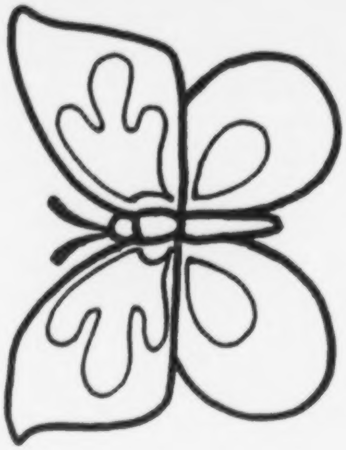

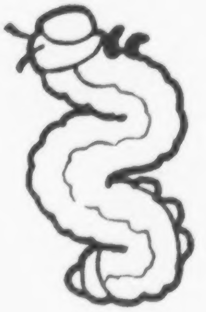

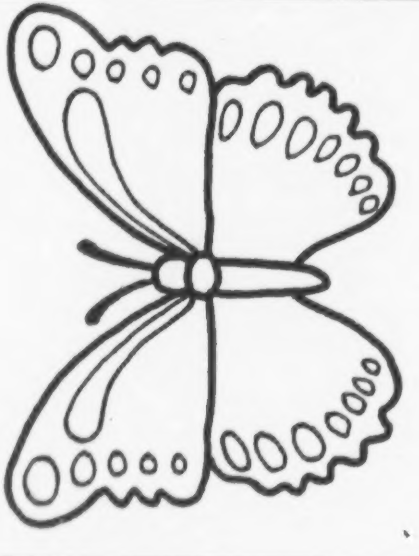

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C 335

CREEPY CRAWLIES

Three-Year-Olds

Session 4

CONCEPT: Creepy crawlies protect themselves. (Children will become familiar with how creepy crawlies protect themselves from other animals.)

PROCEDURES:

1. Gather the children in a circle group. Open with name fingerplay to distribute name tags/review names. Introduce the day's concept with a fingerplay.

2. Use the turtle puppet to show children how the turtle actually pulls his head inside his shell. Talk about why the turtle might pull his head inside. Listen to the children's suggestions, then through questioning lead them into how turtles use their shells for protection.

3. Next, show the live turtle. Let the children observe the turtle. Talk about why the turtle does or does not have his head pulled inside his shell. Ask the children to think about times that the turtle might pull his head inside his shell.

4. Next, show the children a whole turtle shell. Give them an opportunity to touch it and look inside. Ask children how the shell would protect the turtle. Ask the children to describe how the shell feels.

5. Then, talk to the children about other animals that use a shell for a home. Show the children the snail puppet. Demonstrate how he can also pull his head inside his shell. Read the book, Snail's Spell. Remind the children to watch the snail and how he uses the shell. Ask them to notice if the snail uses his shell the way a turtle might use his shell.

6. Next, tell the children you have some live snails today and show the children the snail habitat. Talk with the children about the snails and what they are doing. Allow the children the opportunity to compare the live snail with the snail in the story Snail's Spell Are there things that are alike or different about the two snails?

7. Bring out the hermit crab in his habitat. Explain to the children that hermit crabs also use shells for their homes, however, the shell is not attached to the hermit crab. Tell the children that although the shell is not attached to the hermit crab, he still uses it for protection like the turtle and snail. When he is very small, he finds a small shell to live in. As he gets bigger and bigger, he must leave his small shell and find a bigger one. When that shell gets too small, he must look for another. Compare this concept to the children outgrowing their shoes.

8. Remind children that these animals need their shells for protection. Then, explain that we must also protect our bodies from harm. Brainstorm with the children about some things people must do to protect themselves (clothes, shoes, bike helmet, seat belts).

9. Read Toby Turtle Takes a Tumble. Before reading the story set a purpose for the children to listen by asking them to watch for what happens to Toby. After reading the story, discuss why Toby got hurt. Compare this to children not using helmets and seatbelts. Talk about why it is important to protect ourselves.

10. Do a creepy crawlie fingerplay (repeat the opening concept fingerplay or select another creepy crawlie fingerplay) to resettle the group and prepare to disperse to centers. Once attention is regained, explain the center options available for that day. After you have explained the centers, ask the children to choose where they would like to go. As they choose, send them on their way. Allow the children to freely play and choose another center as they finish each task. Be sure to float from center to center and interact with the children as they play to reinforce the concepts for the day. Play music from the record Insects, Bugs, and Squiggly Things while children are in the centers. The center options today are:

A. Provide various puzzles of snails, turtles, and hermit crabs. Talk with the children about similarities and differences between the animals. (i.e. shells, color, connected, legs) Allow 3-4 children at this center.

B. Provide books for the children to read about turtles, snails, and crabs. Include fact and fiction books. Point out the variety of shells seen for each type of animal. Read books to the children at their request. Allow 3-4 children at this center.

C. Provide the live turtle, snail and crab for the children to observe. Also, provide magnifiers for a closer view. Point out slime trail made by snail, if he has made one. Encourage children to notice ways that the animals and their shells are alike and different. Allow 3-4 children at this center.

D. Provide several turtle shells for the children to handle and observe. Question children about the hardness of the shells. Ask why the bottom looks different from the top. Encourage children to feel the inside of the shell. Talk about the colors on the shell. Ask the children if the color of the shell can also help protect the turtle. Also put a bike helmet at this center. Ask the children to compare the bike helmet to a turtle's shell. Through questioning, elicit that the hardness of the helmet protects like the hardness of the shell. Allow 2-3 children at this center. (A large sea turtle shell will allow the children to place the shell on their backs and crawl around and pretend to be a turtle for another fun experience.)

E. Provide a large nautilus shell that has been split in two in a center for children to explore. Point out how the shell is similar to those used by snails and crabs. Point out the hardness of the shell. Ask children what the snail looks like when it is inside that type of shell. Encourage children to curl up like the snail does. Allow 2 children at this center.

F. Let an adult place the live snail on a clear tray and watch the trail that the snail leaves behind. Let the children look underneath the tray to observe the movement of the snail's foot. Encourage the children to try to move like the snail. Allow 2-3 children at this center.

G. Provide the turtle and snail puppets for the children to play with. Encourage them to make up stories about them. If they are having difficulty getting started, give them a story starter. (Example: One day the turtle met a ...) Allow 2-3 children at this center.

H. Provide a seashell assortment with a variety of shells for the children to match and sort. Allow 3-4 children at this center.

11. Two minutes before you are ready for the children to clean up turn out the lights and make an announcement to warn them to begin finishing up whatever they are working on. After two minutes, turn out lights again and ask the children to clean up. Call children back to the group circle with a song. Allow each child to share one thing they learned or played with during center time. Read Home For Hermit Crab. Ask the children to watch for the hermit crab's home to see if it is like any of the ones we talked about today.

12. Close with the turtle and snail puppets to review why they pull inside their shells. Use the large nautilus shell to emphasize the hardness of the shell and how it protects the animal. Ask the children what we can use to protect ourselves, since we don't have shells. Through questioning try to elicit the answer that we have to wear bike helmets to protect ourselves.

13. Last, use the turtle and snail puppets to help sing a good-bye song. Let the children hug and kiss puppets good-bye as you collect name tags.

RESOURCE KIT:

1. Use the patterns to make a game in which child matches turtle, snail, and hermit crab to its shell.

2. Use the patterns to make picture cards of turtles and picture cards of their shells which must be matched by color.

3. Use the patterns to make a game in which the child must match the three different sized bodies of the hermit crab to three different sized shells.

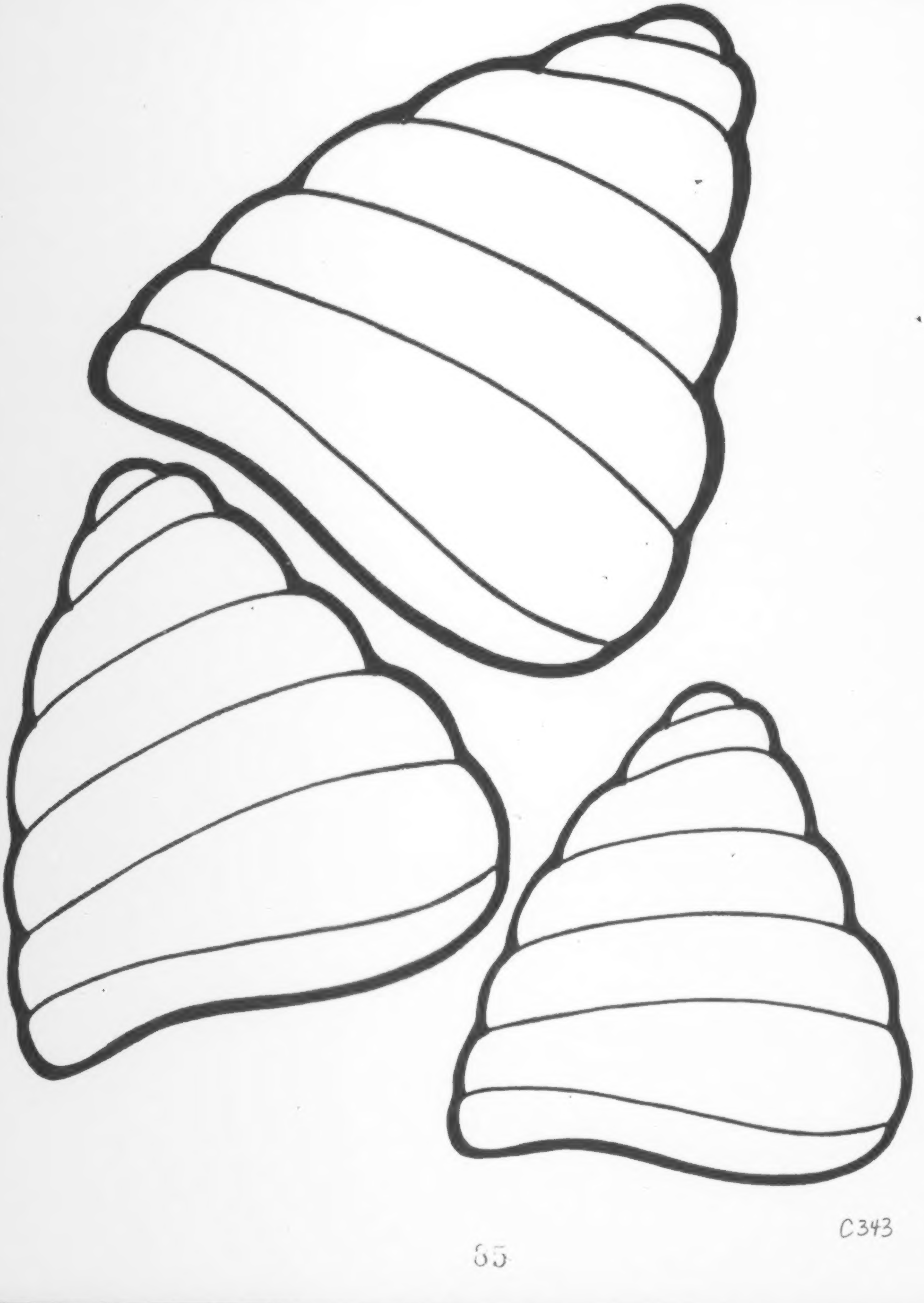
4. Use the patterns to make picture cards of snails and picture cards of shells which children match by shape.

5. Provide real shells for children to sort, match, and seriate by size.

6. Leave behind a live hermit crab and its box for children to care for and observe.

7. Suggest an art project: provide paint for stamping and paper and collapsible whisks of various sizes. Let children stamp spirals all over the paper.

8. Use the patterns to make a lotto game of things children use to protect their bodies.



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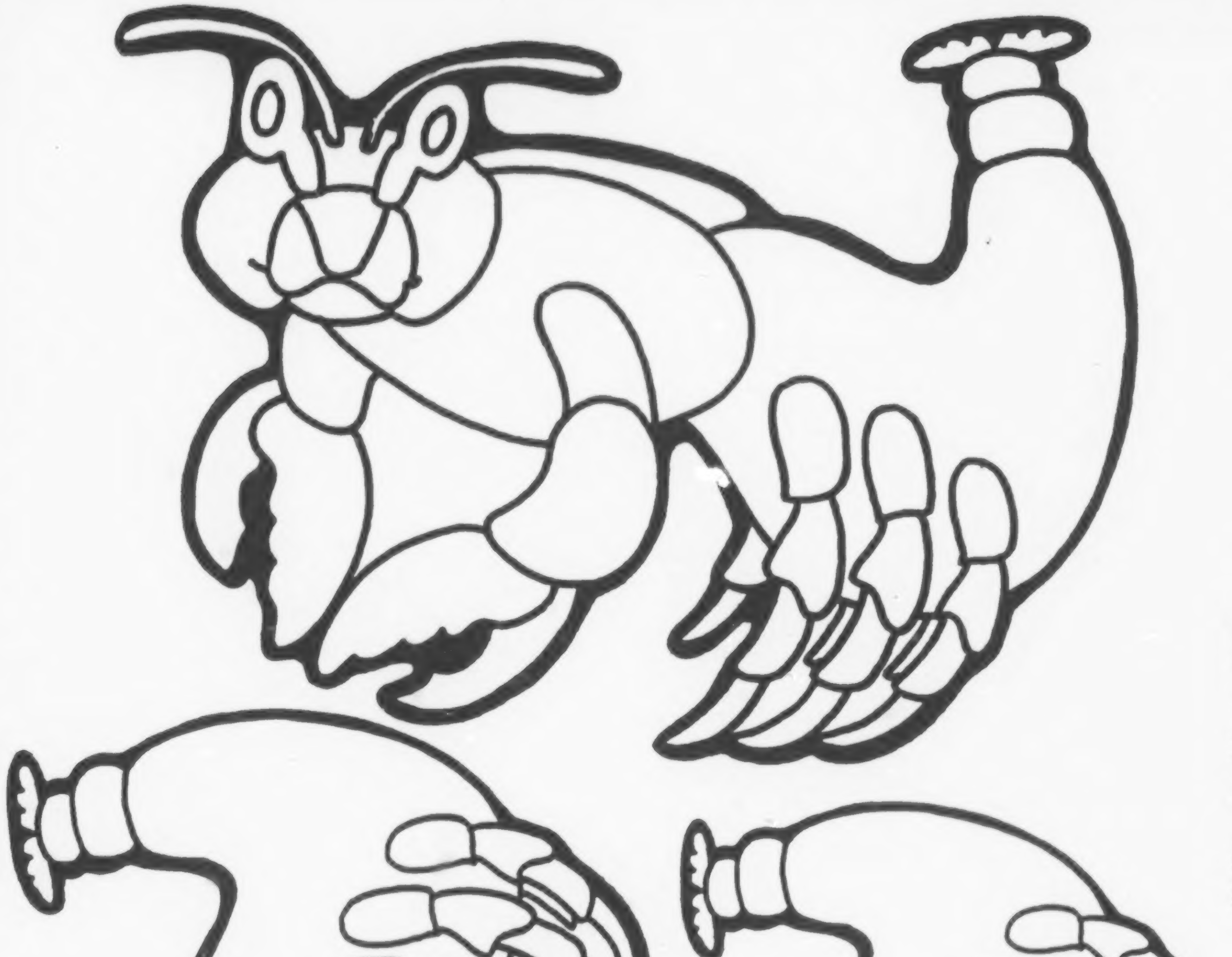

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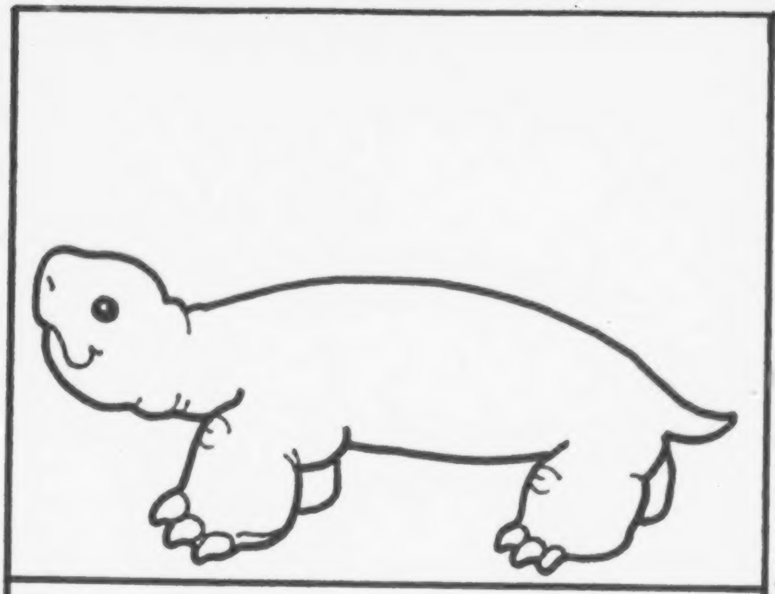

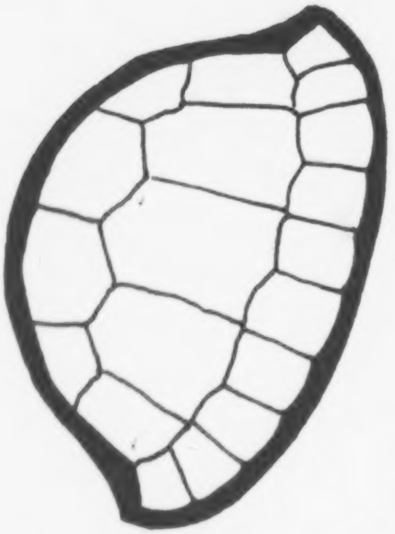

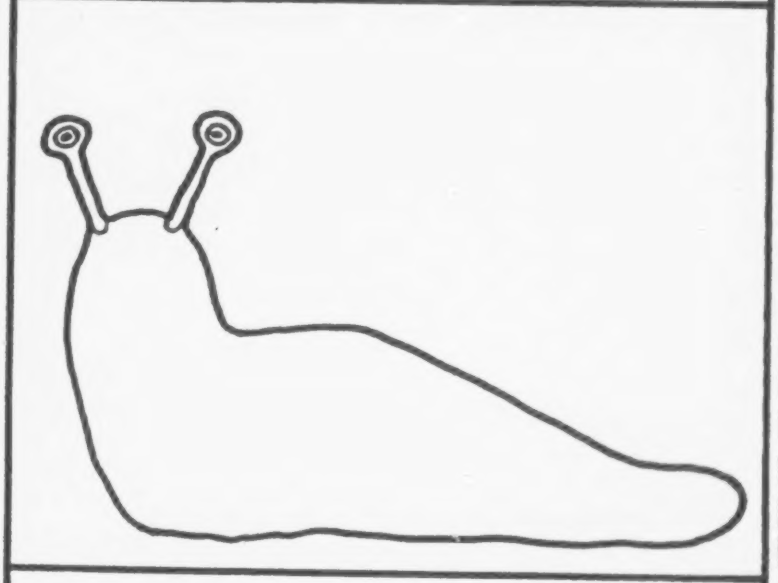

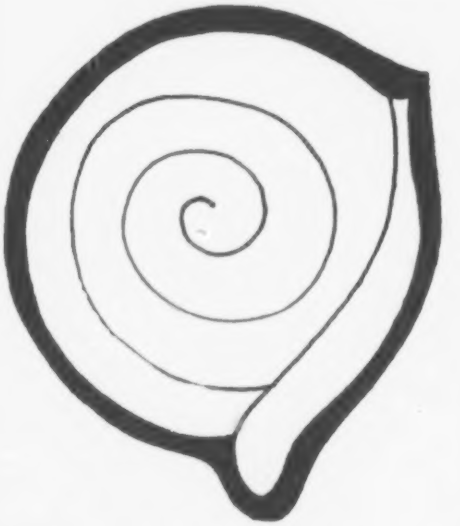

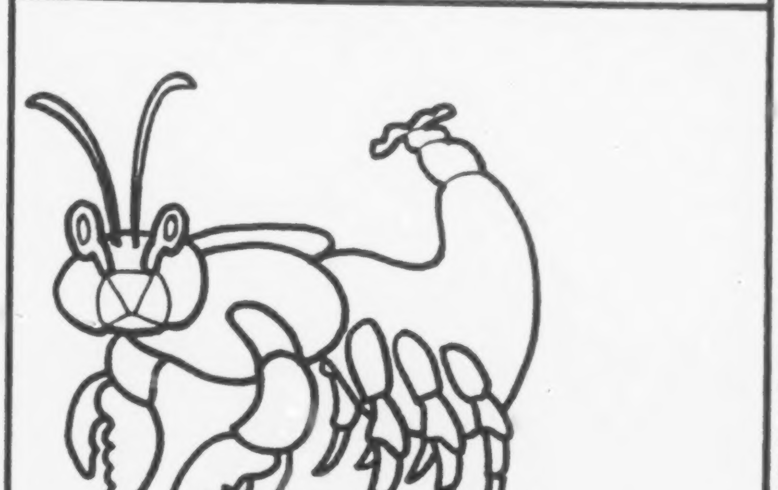

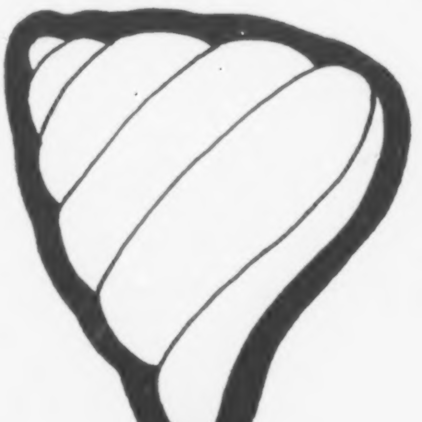

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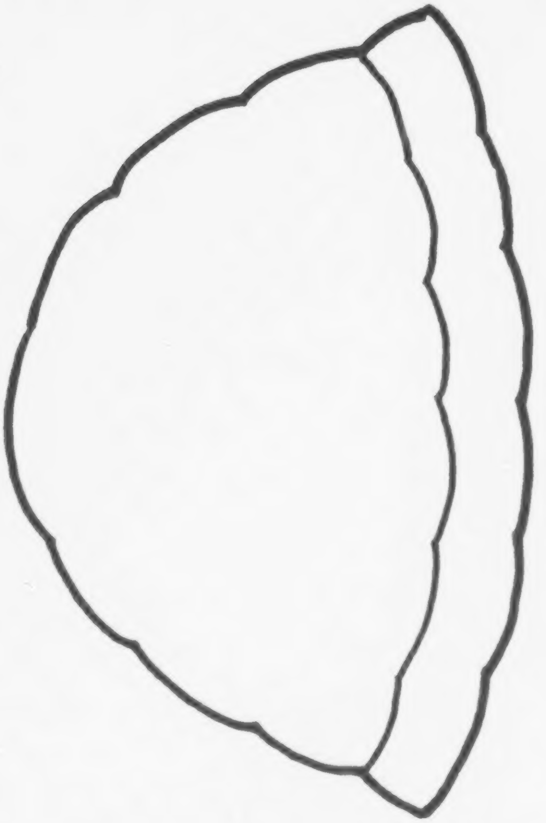

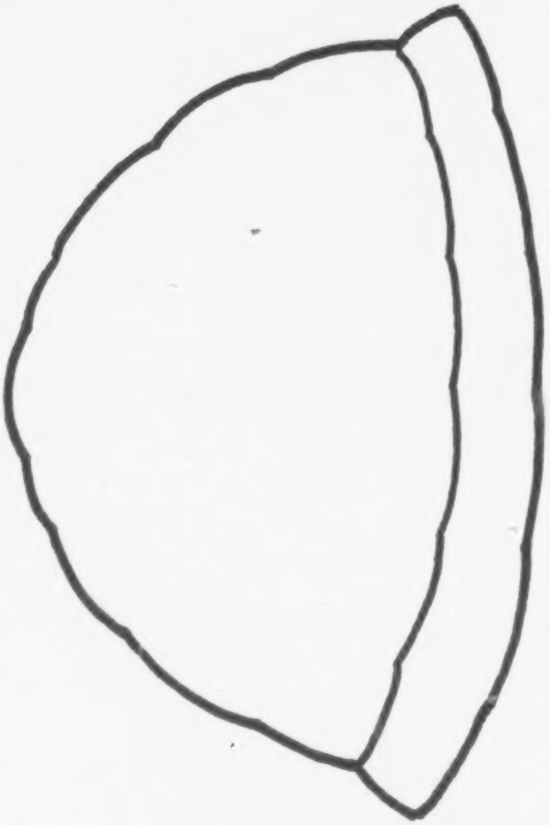

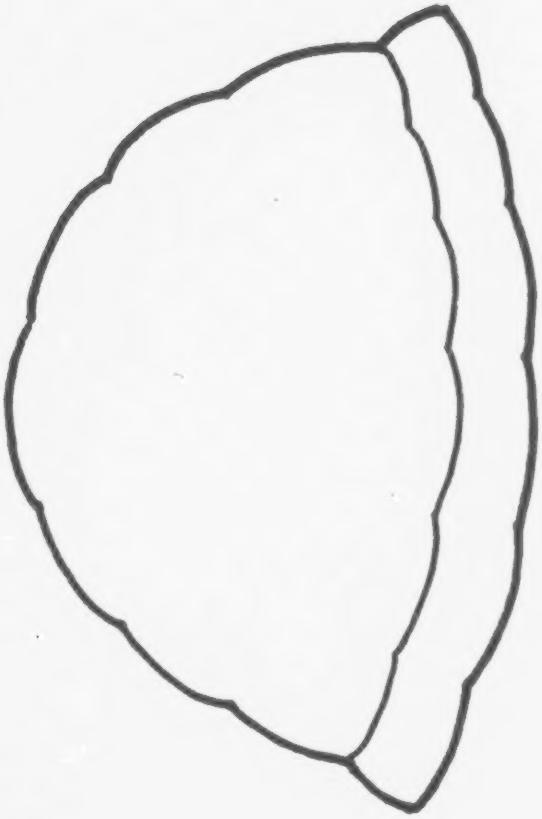

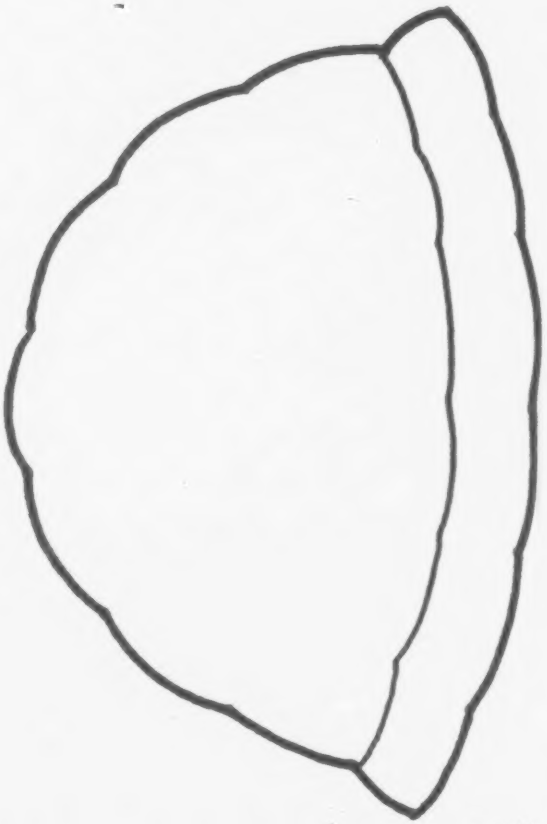

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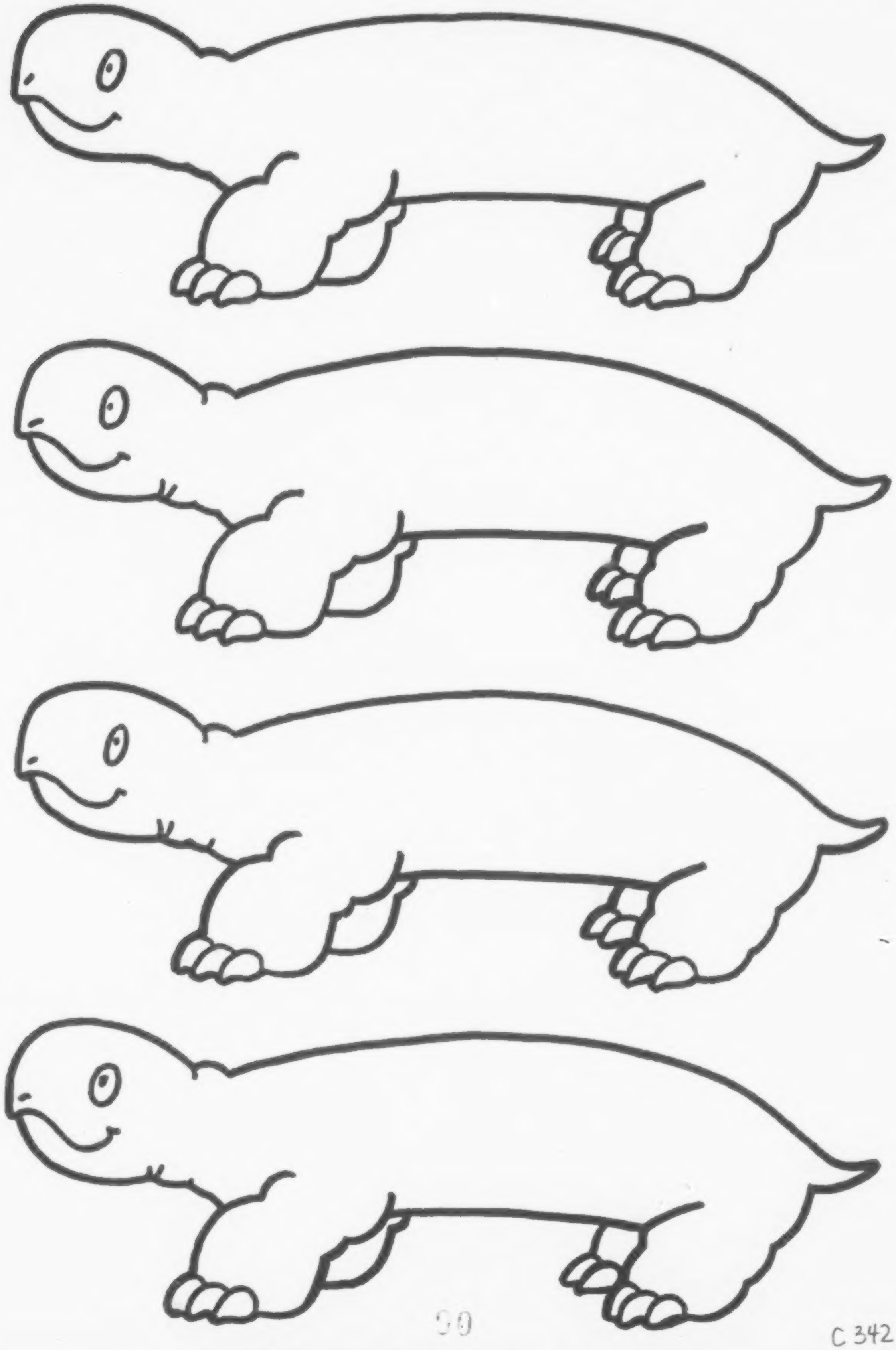


C 342

Creepy Crawlies

Teacher Resource Activities

Three-Year-Olds

CREEPY CRAWLIES
RESOURCE KIT
Three-Year-Olds

Session 1: There are many kinds of creepy crawlies.

1. Use the plastic creepy crawlies for children to sort as insects and non-insects. To extend this activity, ask children to sort by number of legs, creepies with wings, by color, or by size. Children can also use these creepies for counting. Label paper plates from 1 - 5 using numerals and dots to represent the number. Children count the appropriate number of creepies onto the plates. Put the creepies in the sand box and ask children to sort by type as they search for them.

2. Use two copies of each of the patterns numbered C312. One pattern features amphibians, one features reptiles, and one features insects. Use one of each of the sheets as a lotto board. Cut up the other sheet and let children match pictures to those on the lotto board. To increase the difficulty, both sheets can be cut and the pictures used as a matching game.

3. Use one copy of each of the patterns numbered C313. Cut into cards the large, medium, and small pictures of creepy crawlies to use for size seriation. For some children, it may be necessary to start with only two pictures and then add the third as the children's skill level increases.

4. Use one copy of each of the patterns numbered C314. Cut each picture of a creepy crawly into three or four strips. The children can put them together like a puzzle to form the pictures.

5. Use the bug box magnifiers for children to examine the plastic creepy crawlies. Also use magnifiers to examine real creepy crawlies. Encourage children to bring in any creepies they find. Go for an insect hunt on the playground and bring in any creepies found.

Session 2: Insects have three body parts, six legs, two antennae, eyes, and sometimes wings.

1. Put real ants into bug boxes and let children spend time examining them. Discuss with children the different physical characteristics of the ants.

2. Put the plastic ants in the sandbox for children to search for again. After children have found the ants, have them count the ones they found.

3. Use one copy of each of the patterns numbered C323. Number the end of each ant colony with a number from 1 - 6. Let children count out the appropriate number of plastic ants onto each colony. Encourage pretend play with the ants in their colonies. Talk about the colonies being homes for the ants.

4. Use one copy of each of the patterns numbered C324. Cut each of the insects into three parts, taking care to divide them at each body part junction. Let children piece the puzzle together, being sure to point out the different body parts to them. Help children count the legs on each insect.

5. Use one copy of each pattern numbered C325. Cut out the ant body parts to make a flannel board set. Provide children an opportunity to put the body parts together on the flannel board. Remind them of the names of the body parts.

6. Use one copy of each pattern numbered C326. Cut away the one edge and glue on the top of the other sheet to make the game board. Use the game board and plastic ants to play a counting game. Use a spinner or a die to show the number of spaces each ant can move. Children can also match the color on a spinner with a color on the game board and move to the appropriate square. The object of the game is to get your ant out of the tunnel.

7. Use one copy of each pattern numbered C327. Make Ants-on-a-Log for snack one day. Help children follow the recipe cards. Let them do as much as they can by themselves.

Session 3: Creepy crawlies change.

1. Assemble the butterfly garden as directed. Take time each day to have children observe it. Discuss with the children what is happening on each day as the larva changes. Remind them of the stages a caterpillar goes through to become a butterfly.

2. Use one copy of the pattern numbered C332. Cut out the card that show the metamorphosis of a butterfly. Have the children sequence these and encourage them to talk about the changes.

3. Using one copy of pattern number C333, stick two matching butterfly stickers on each half of the butterflies. Cut the butterflies in half and let children find those that match.

4. Cut the butterflies and moths out of the poster. Then, cut all of these in half. Show children how to hold a mirror so that they can see the reflection of the butterfly wing in it. Talk about the symmetry of the wings. Also, use the halves as puzzles and let children match one half to the other.

5. Use two copies of pattern C335. Use one sheet containing the pictures of butterflies and caterpillars as a lotto board. Cut the pictures on the other sheet into cards and have children use these to match to the lotto board pictures.

6. Use one copy of pattern C333 and one copy of pattern C336. Cut out the butterfly and caterpillar shaped cards. Use these to do patterning with the children.

7. Bring in pillowcases. As you do a song or fingerplay about the metamorphosis of a butterfly, let the children act it out, using the pillowcase as their chrysalis. They go in as caterpillars and come out as butterflies.

8. Butterfly notepads can be purchased and used at the art center to be decorated by the children.

9. Cut paper into butterfly shape and crease down center. Let children drop several drops of paint into crease. Fold paper again and press paint all over. Open to see the beautiful butterfly.

10. Purchase butterfly stickers to use at the art table, to make matching games, to make sorting games, or to make counting games.

Session 4: Creepy crawlies protect themselves.

1. Use pattern numbered C341 with pictures of animals and their shells to make a game. Cut off the side edge, cut out the shells, and let children match the shell to the appropriate animal.

2. Use three copies of each of the patterns numbered C342 in three different colors. Cut out the picture cards of the different colored turtles and their shells. Let children match each turtle to its matching color shell.

3. Use one copy of each of the patterns numbered C343. Cut out the hermit crabs and their shells. The children should match shell to crab by size.

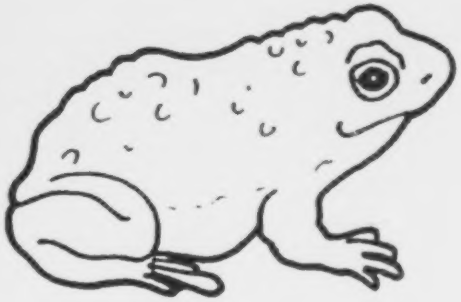
4. Use two copies of the shell pattern numbered C344 and one copy of the snail body pattern numbered C344. Cut out the cards of snails and the cards of their shells. Label a snail body and shell with matching shapes. Let children find the ones that belong together by their shape.

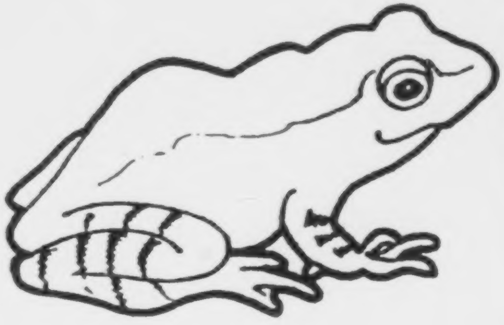
5. Provide real shells for the children to sort, match, and seriate by size.

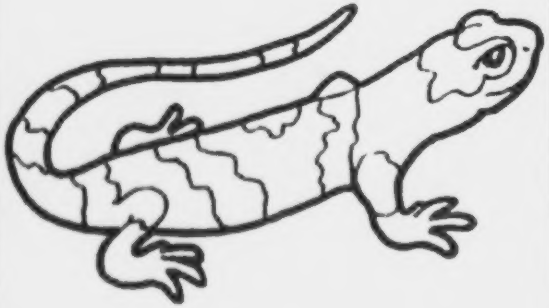
6. Let children take turns caring for the live hermit crabs. Encourage children to observe the hermit crabs and share their observations at group time.

7. Point out the spiral shape of a snail's shell to the children. Follow this up with an art activity. Provide spiral collapsible whisks of various sizes. Fill shallow container with a wad of paper towels and paint for stamping. Let children stamp whisk into paint and then onto paper to make their spiral designs.

8. Use two copies of the pattern numbered C348. Leave one of the sheets of protective clothing/ items as a lotto board and cut the other into picture cards. Let children match the cards to the lotto board. Help children compare this protective equipment with the shells of turtles, snails, and crabs.







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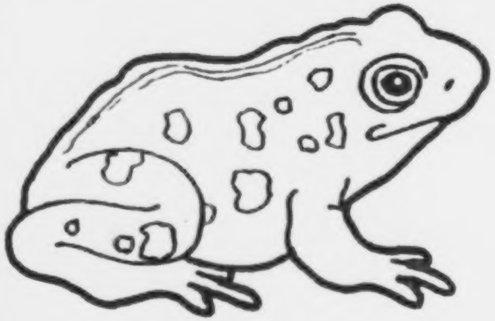

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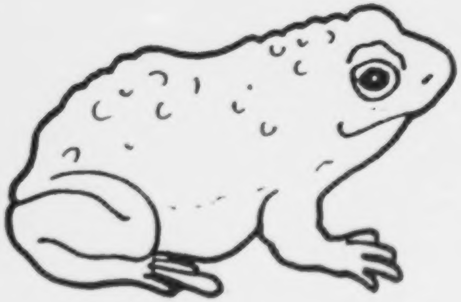

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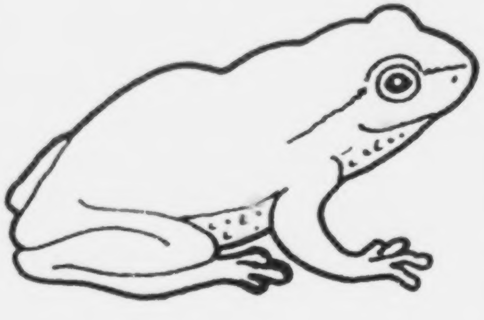

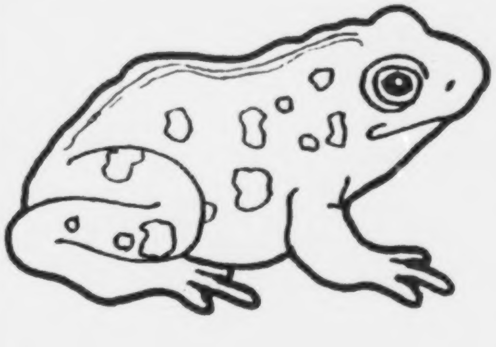

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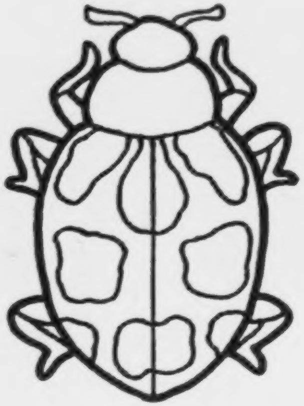

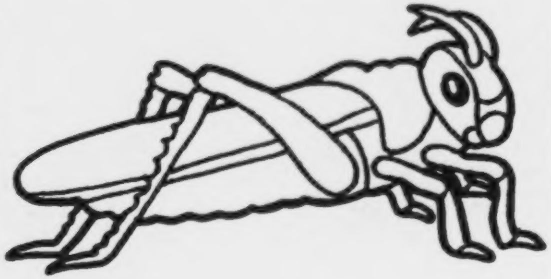

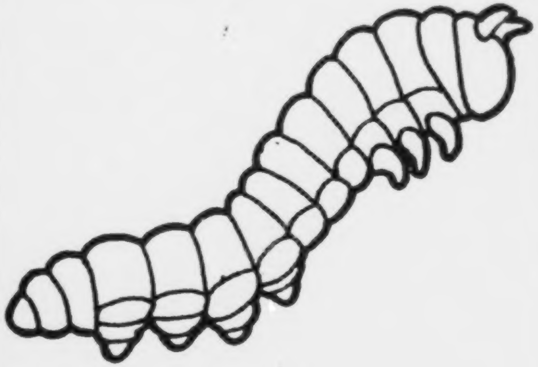

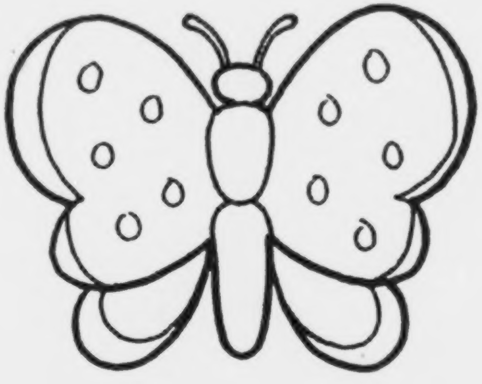

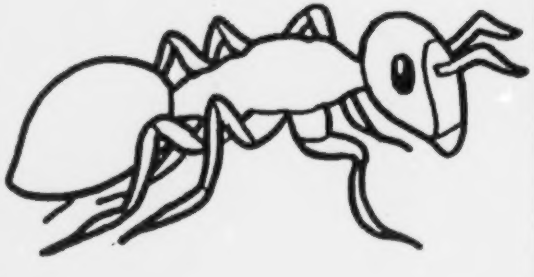

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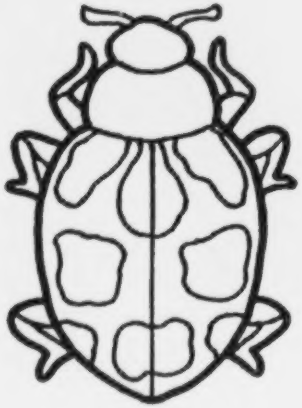

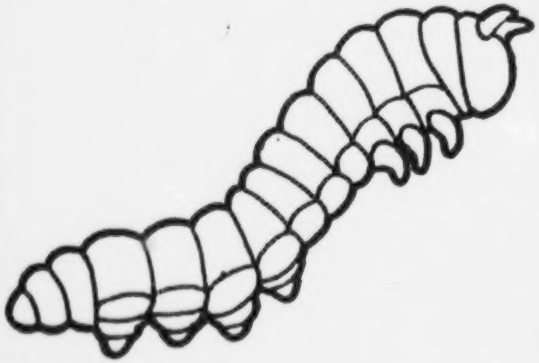

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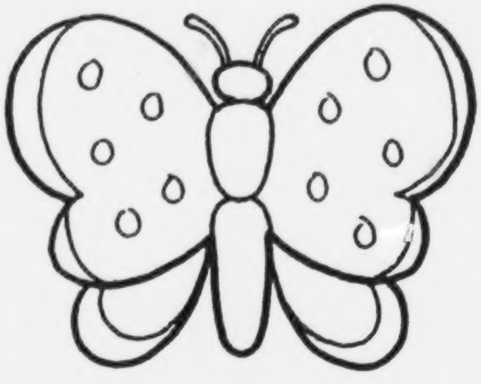

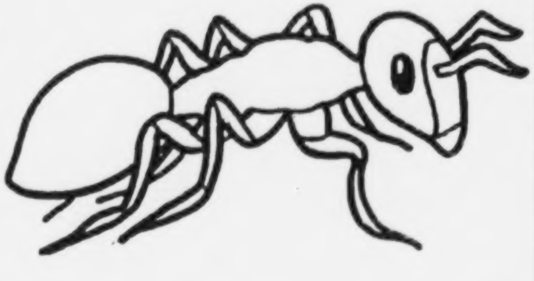

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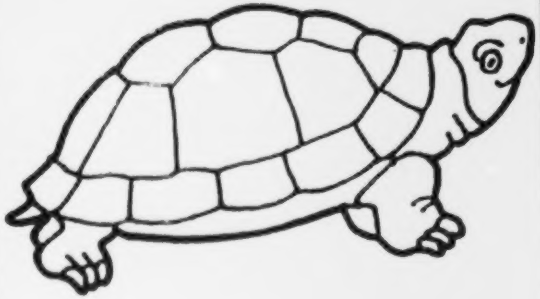

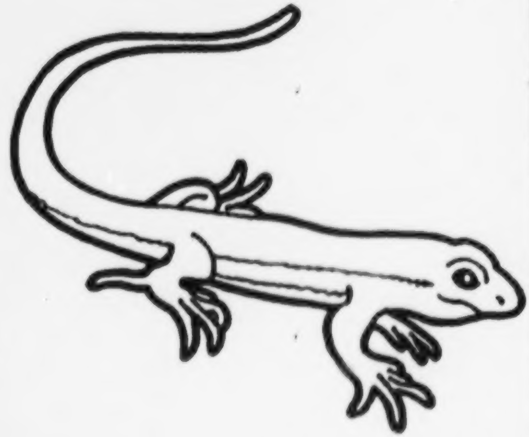

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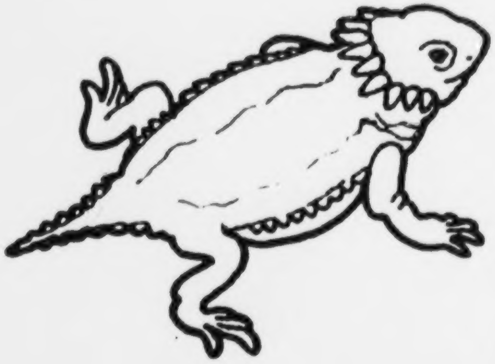

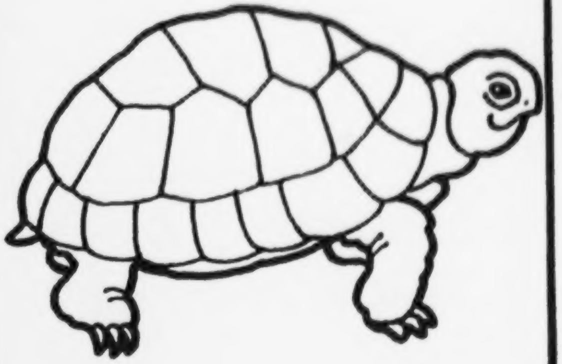

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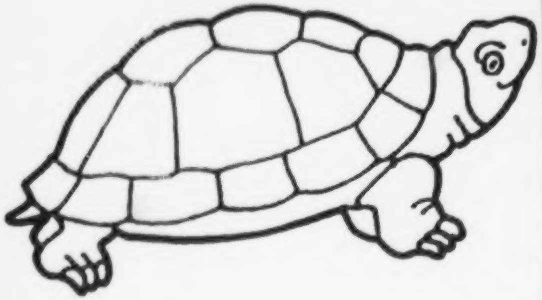

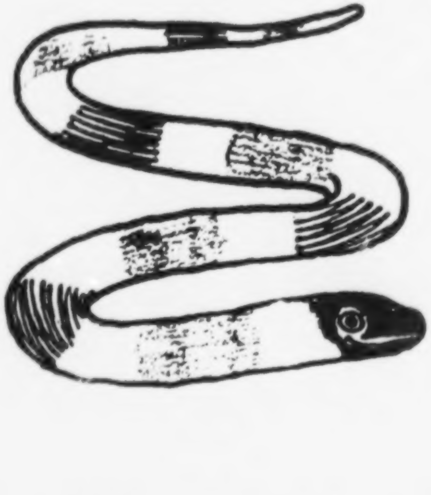

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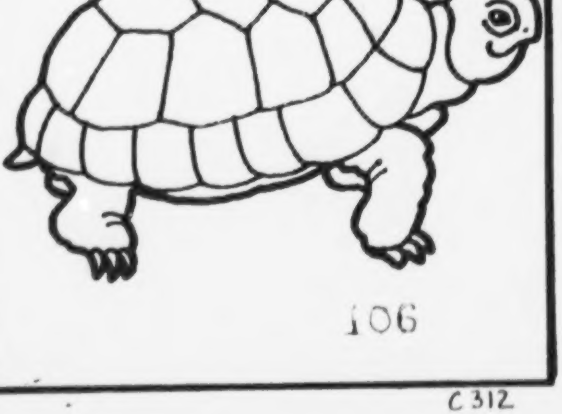

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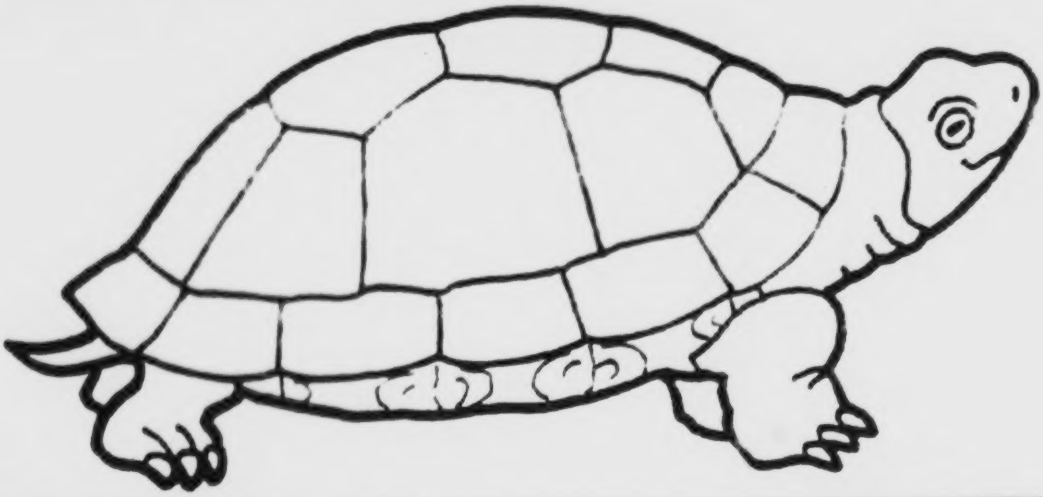

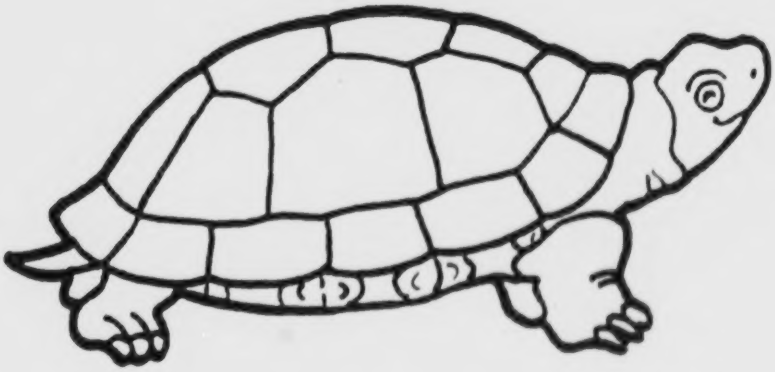

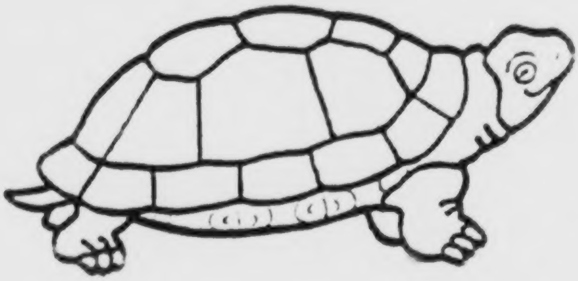

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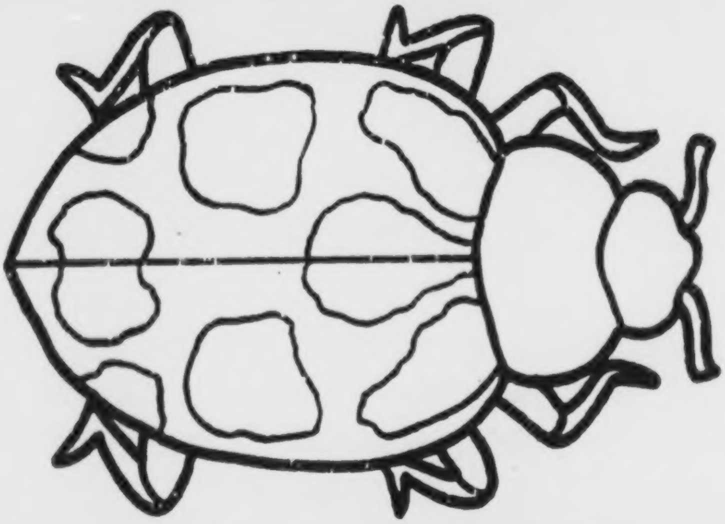

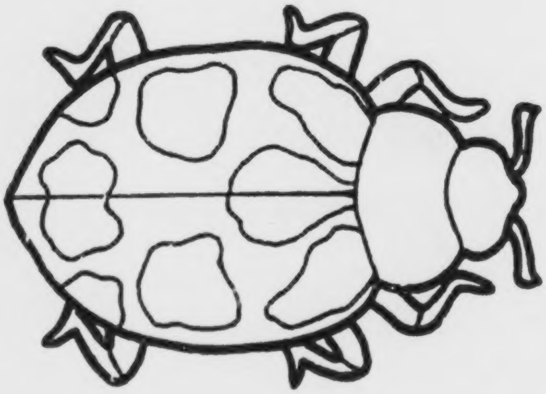

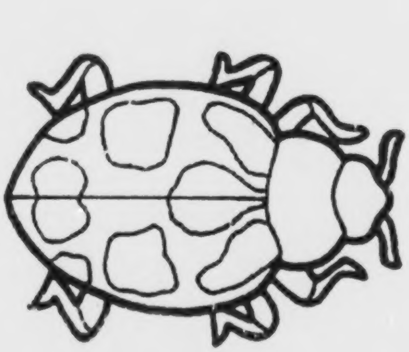

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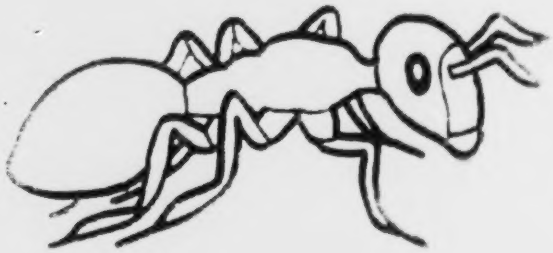
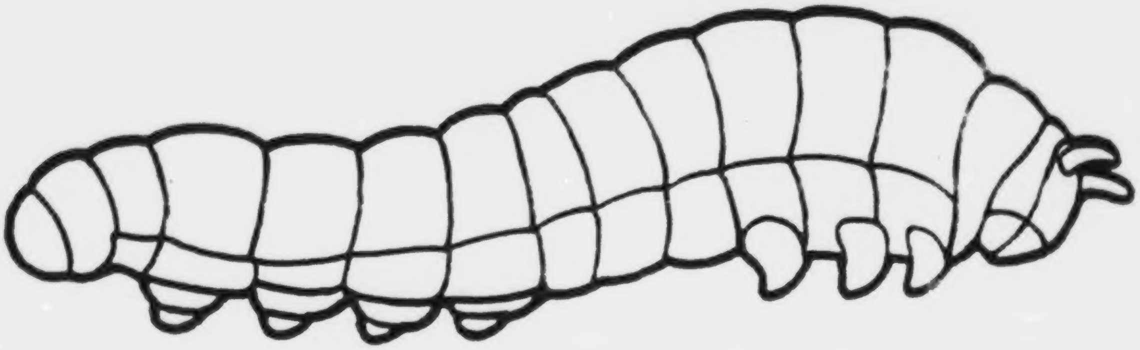
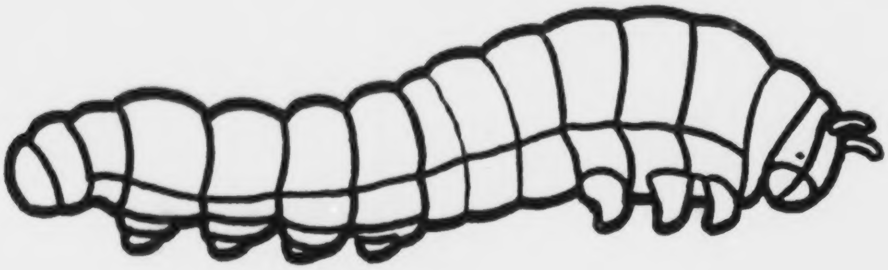
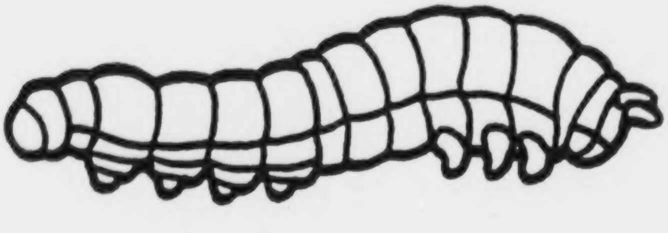


Catawba Science Center







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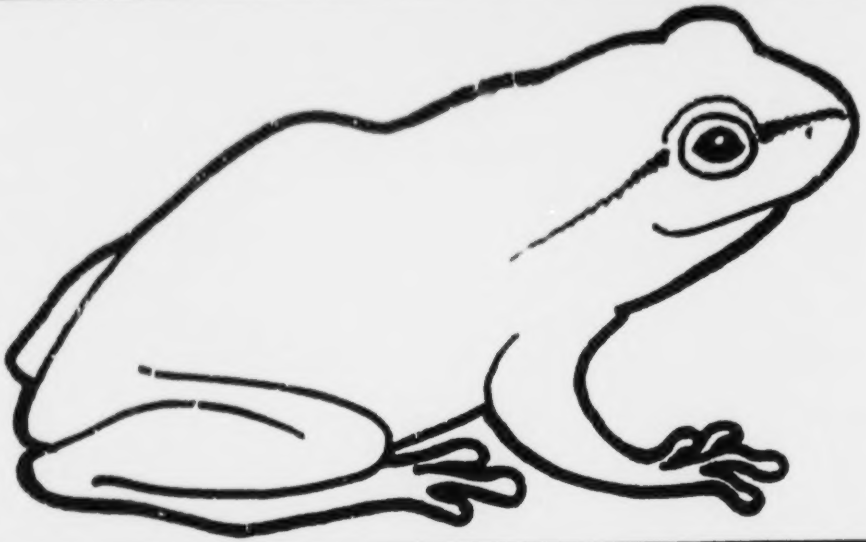
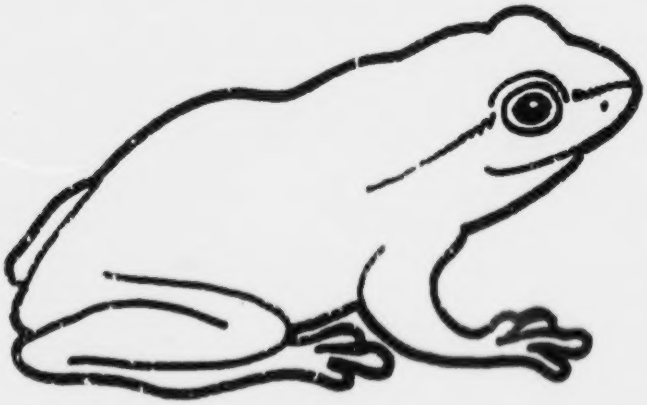
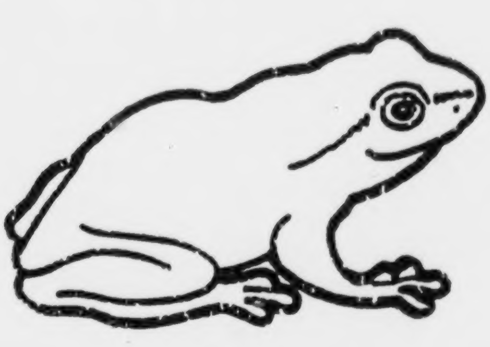
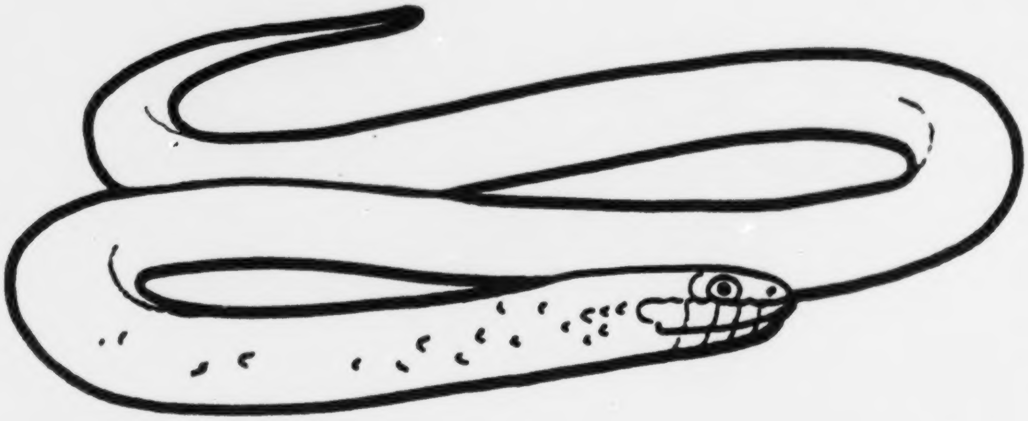
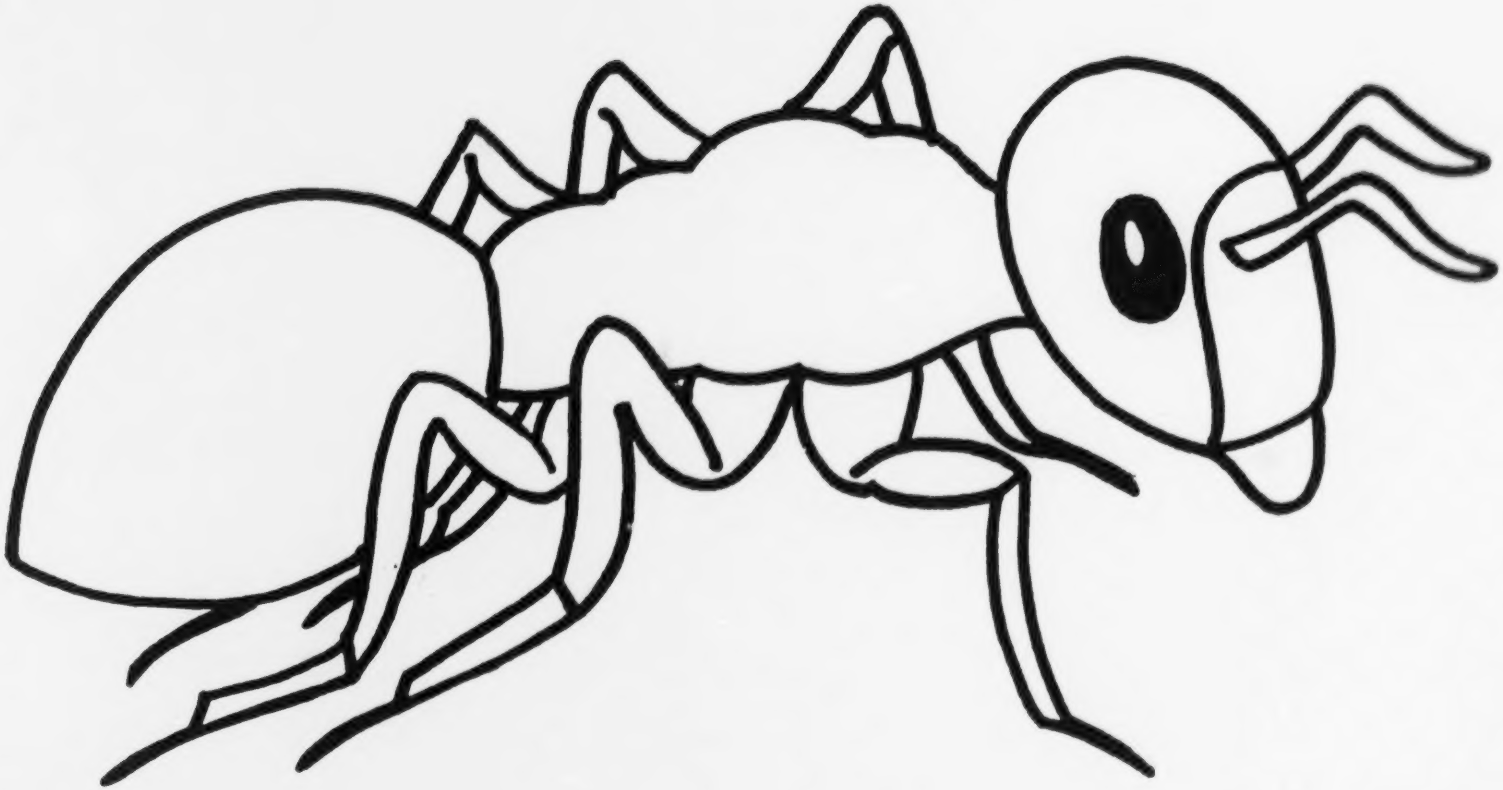








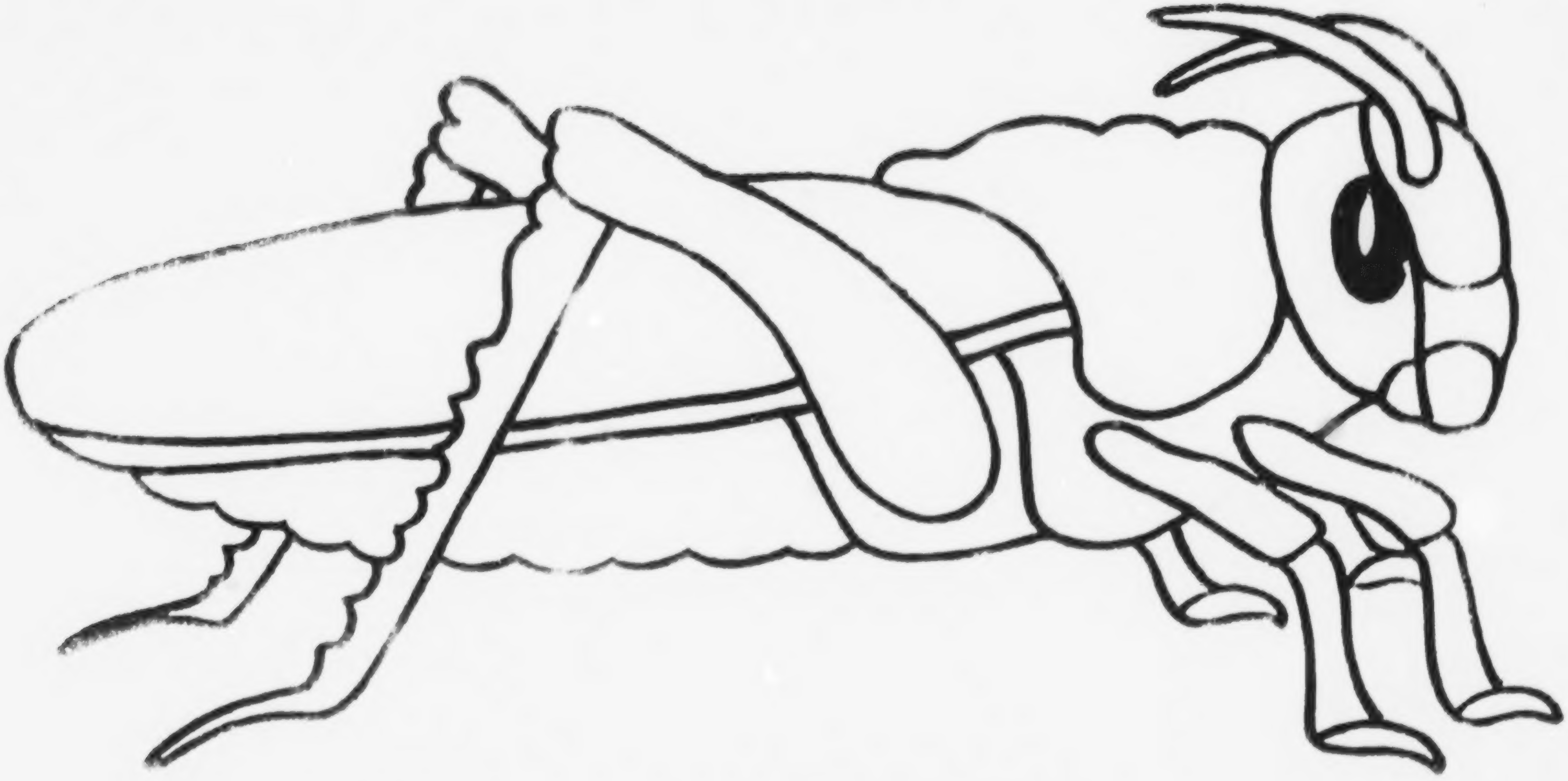
C 313

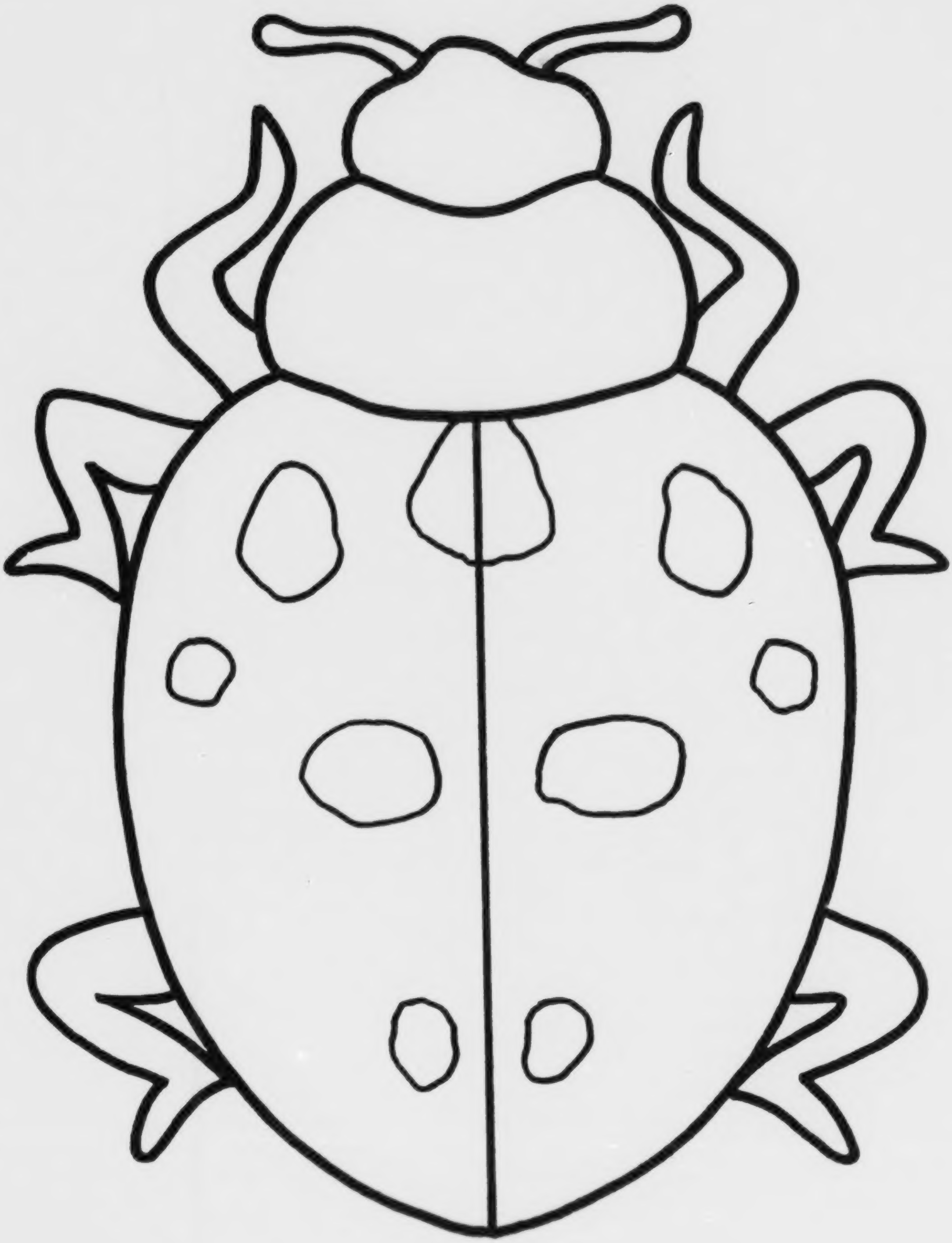


C 314

117

118





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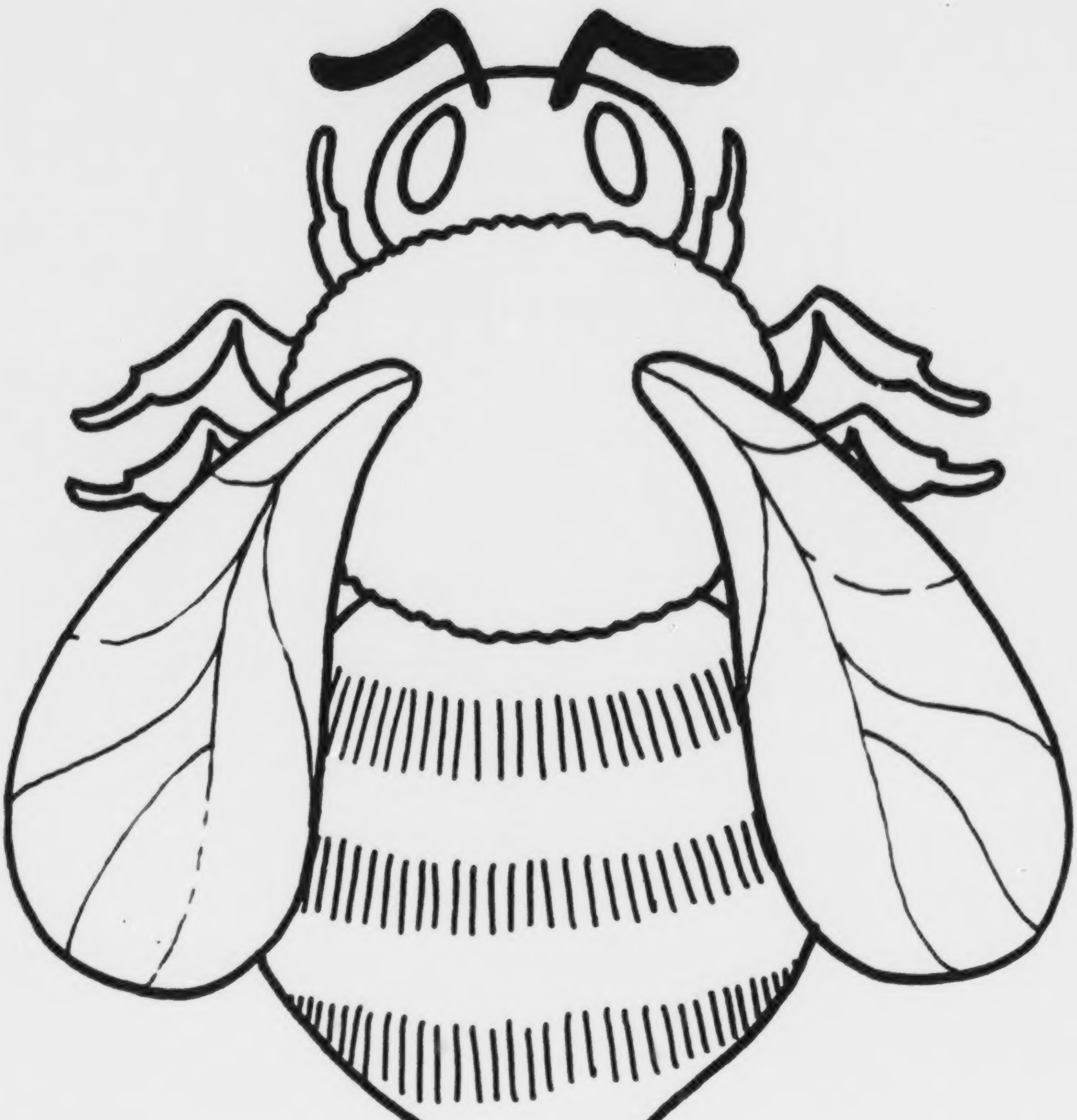
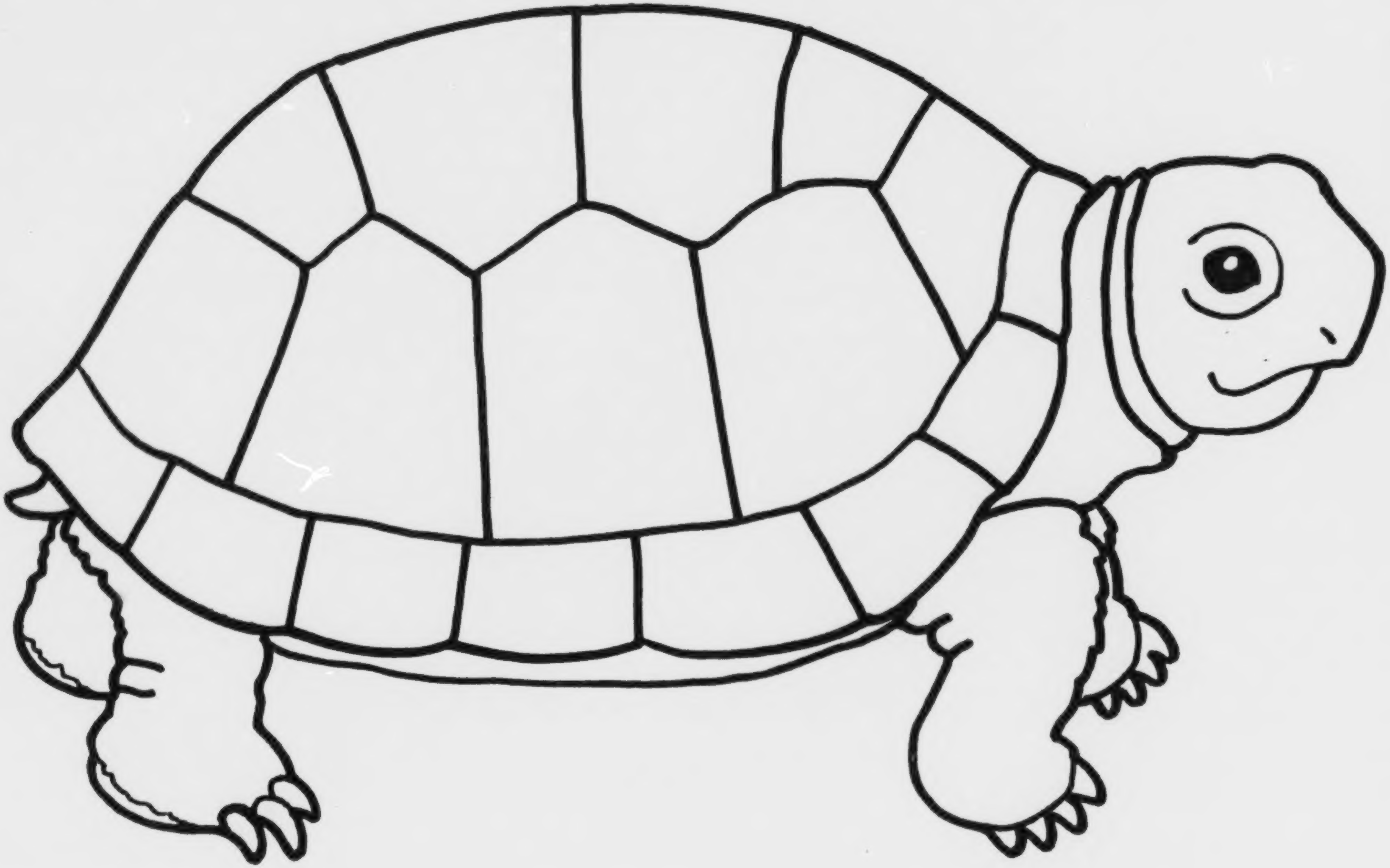
C314





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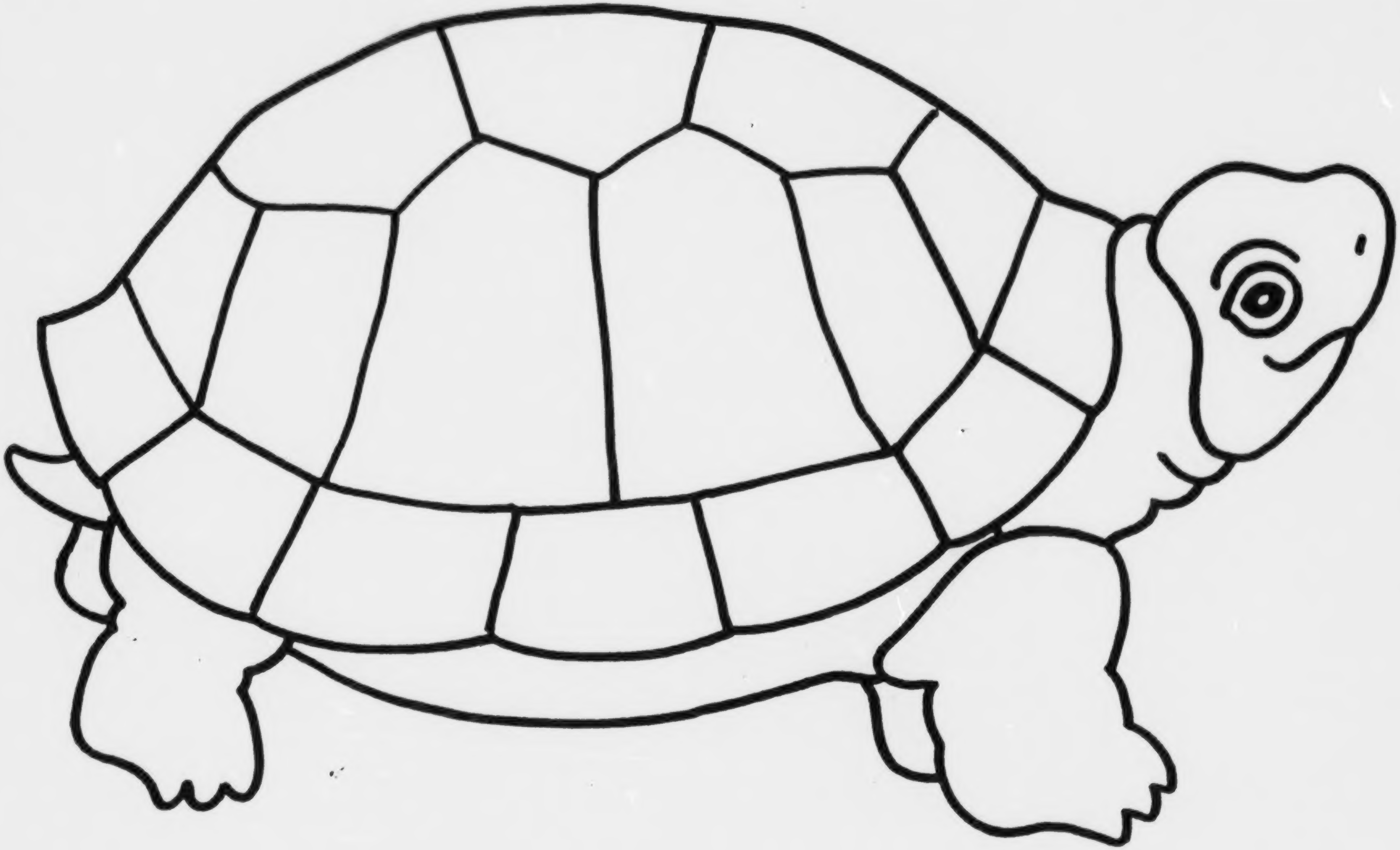
123

124



C314

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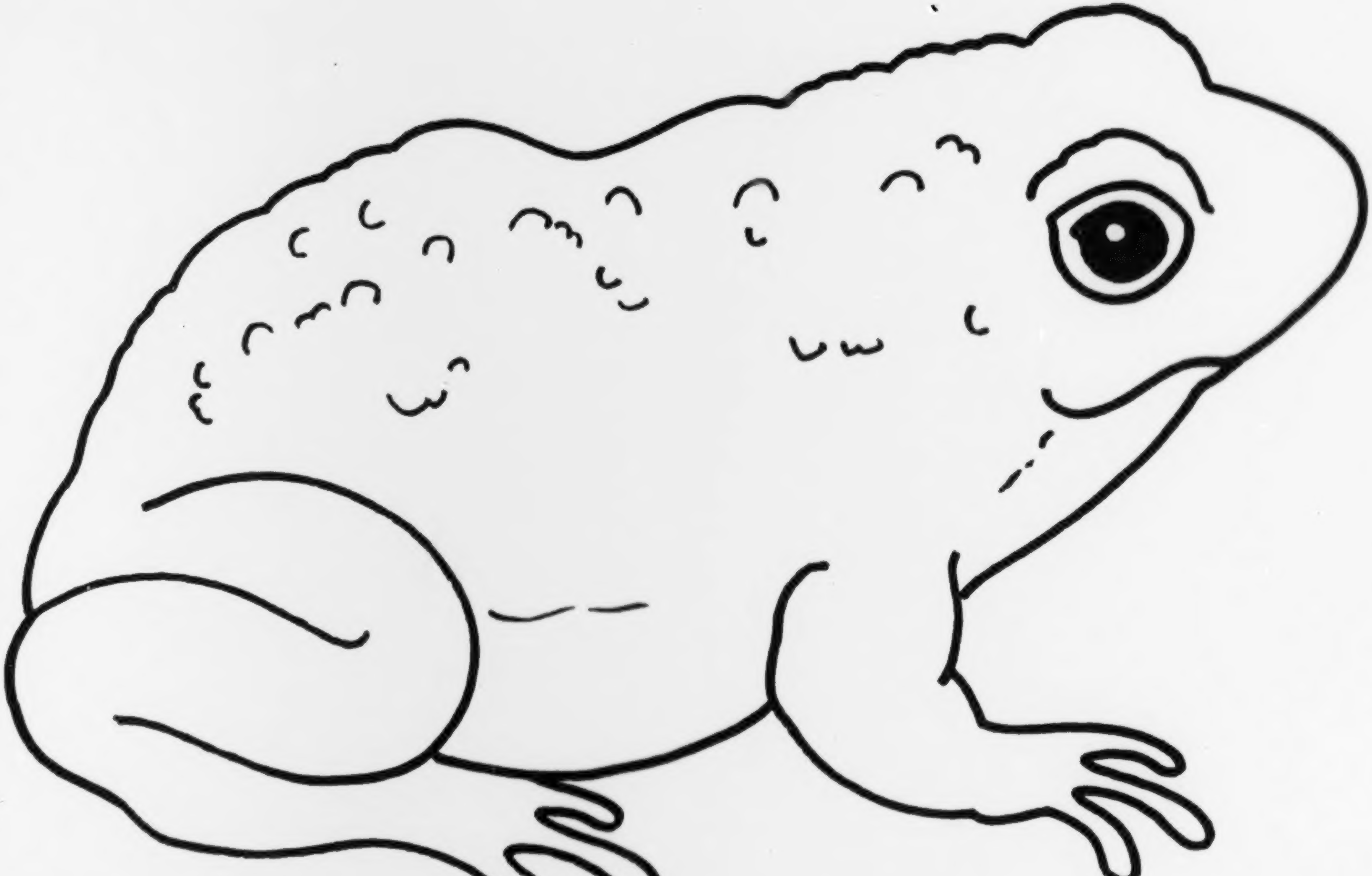
C314

127

128



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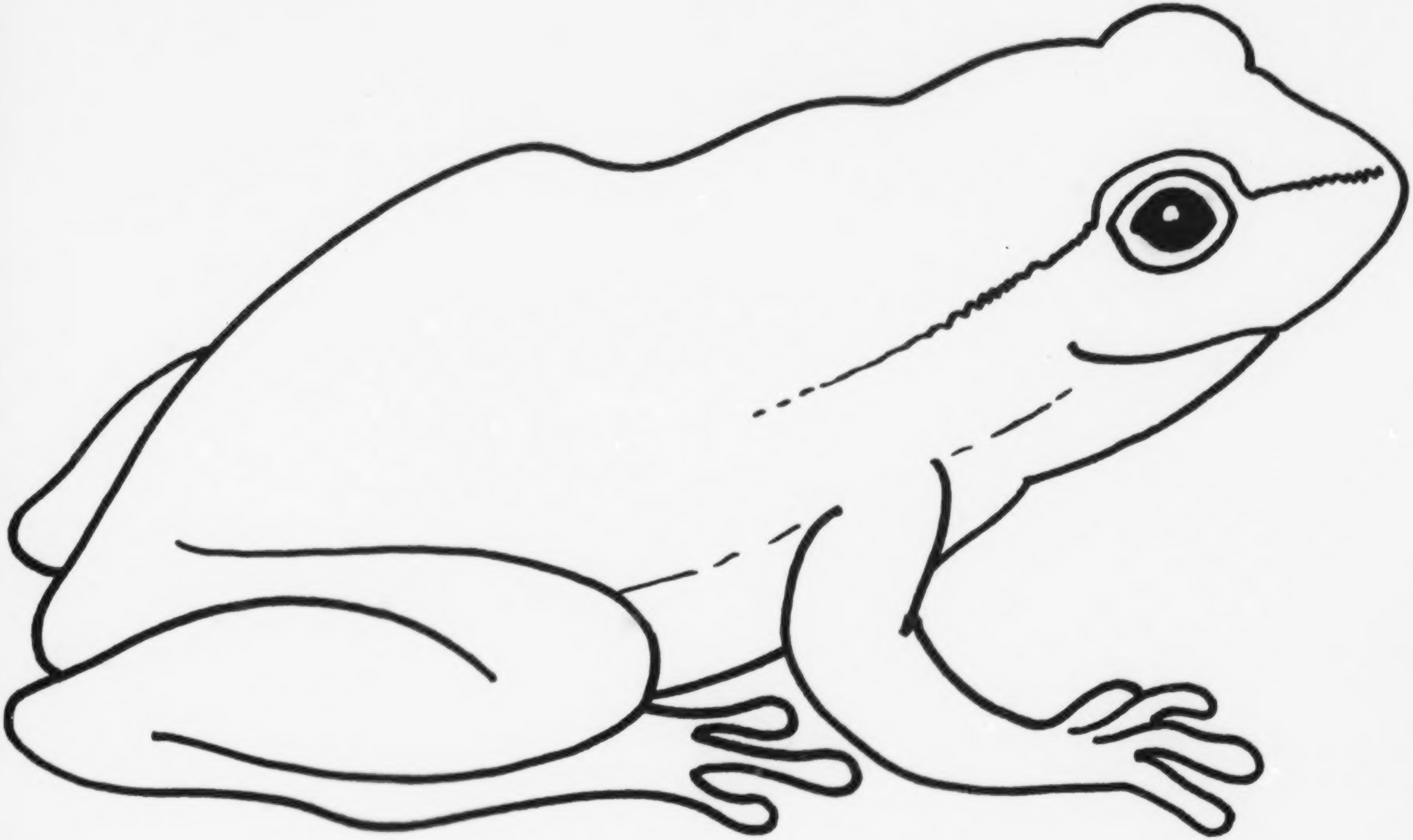

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133

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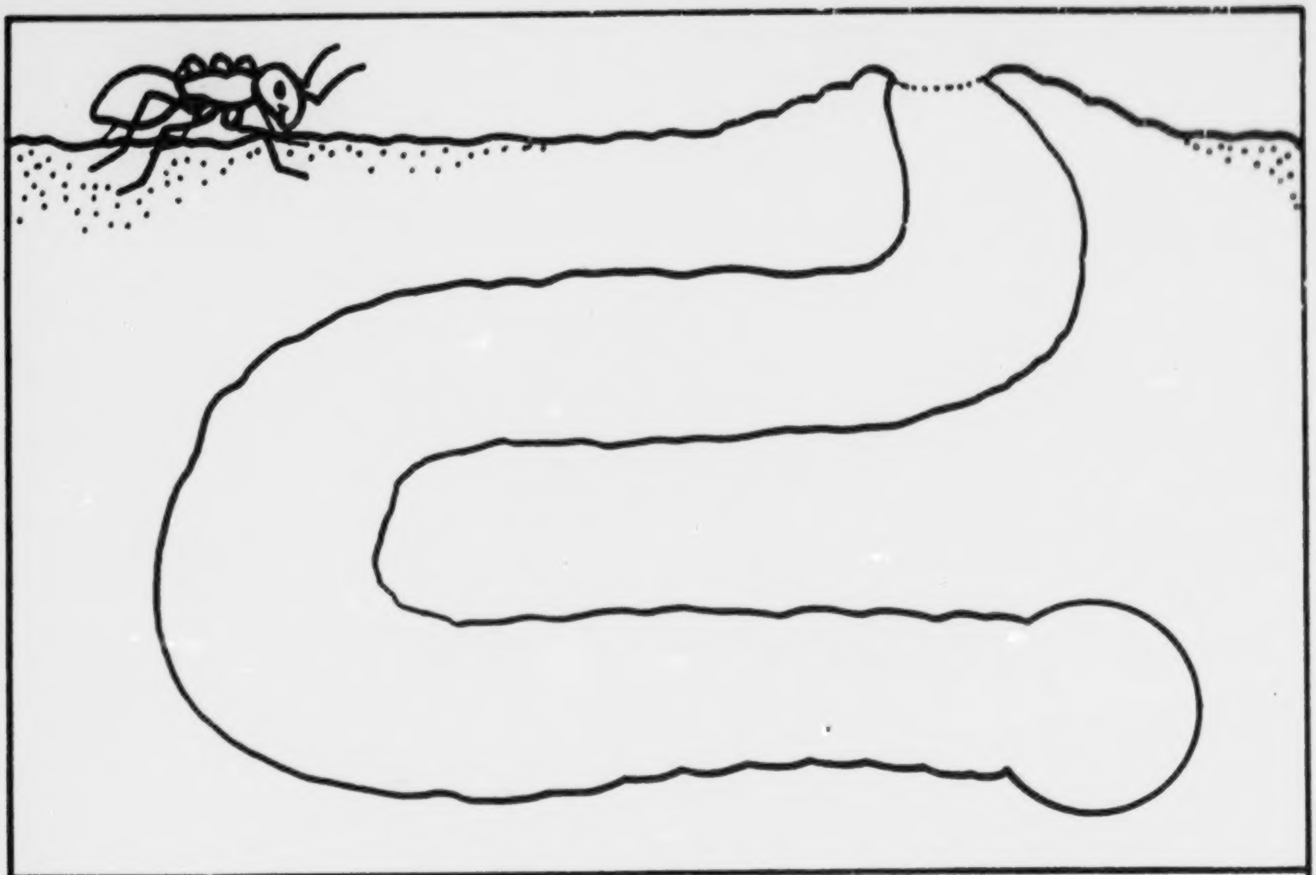

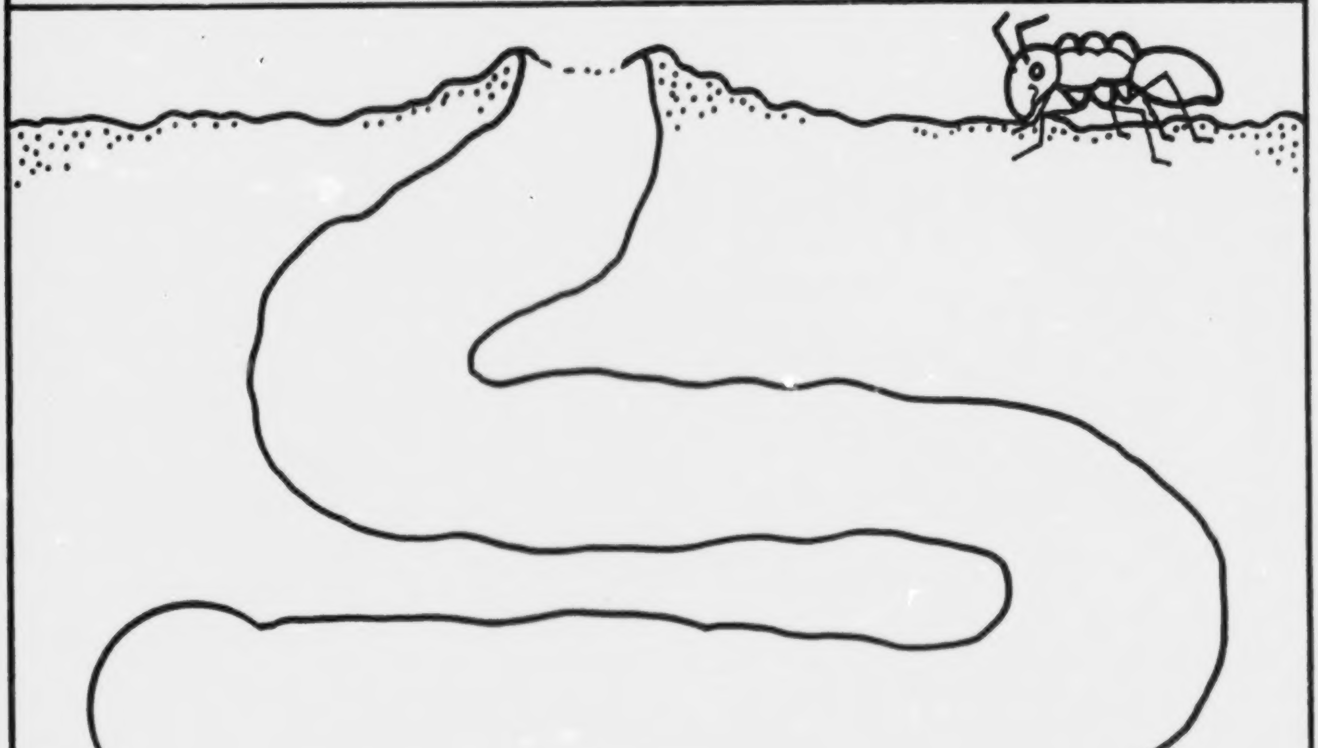

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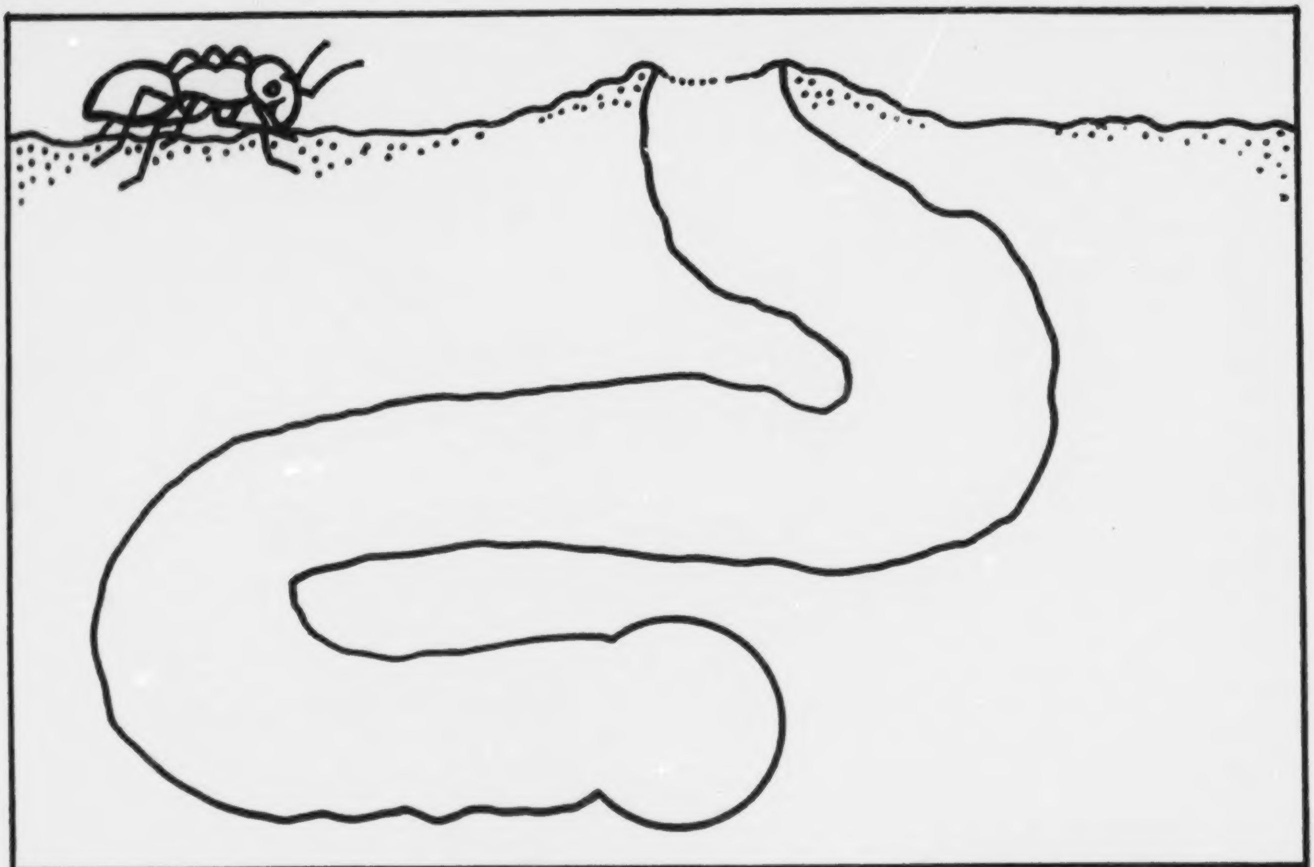

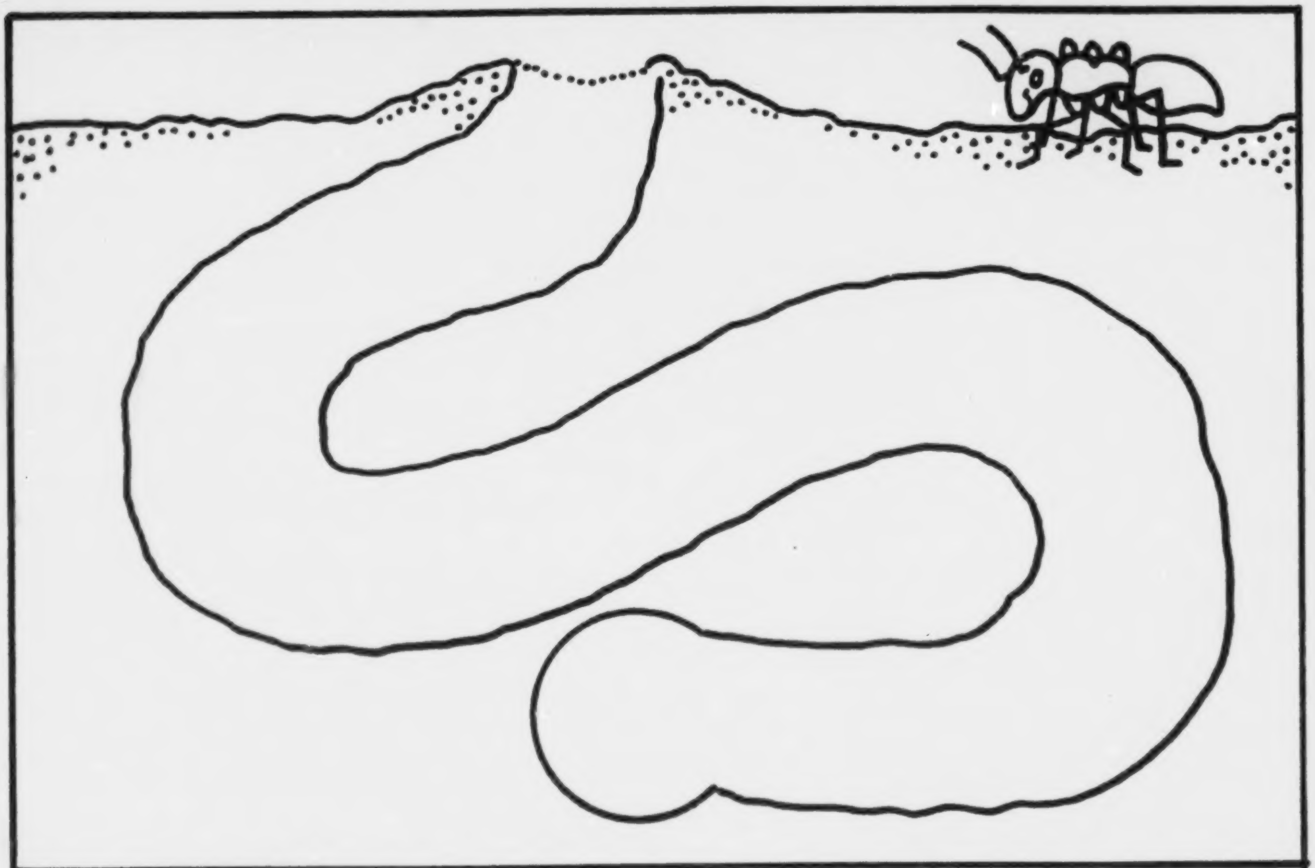

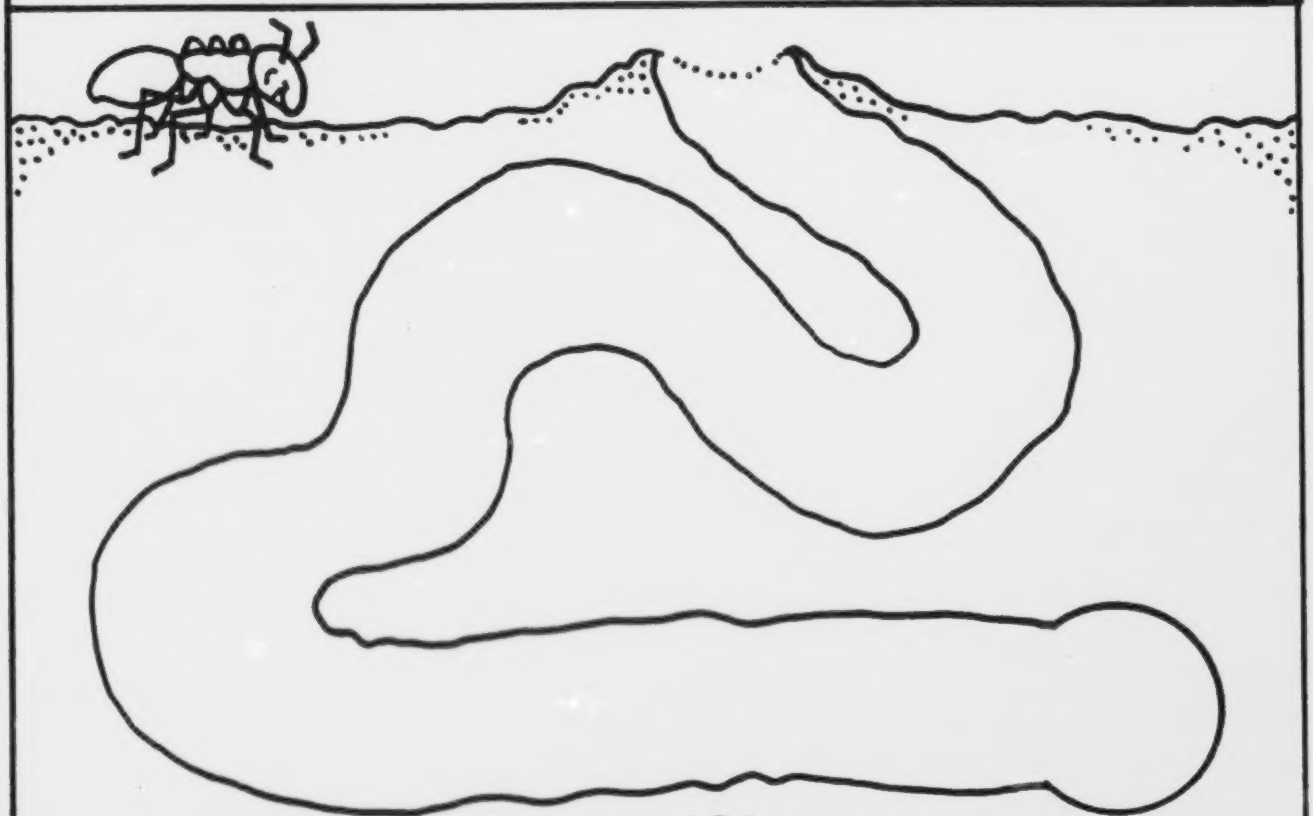

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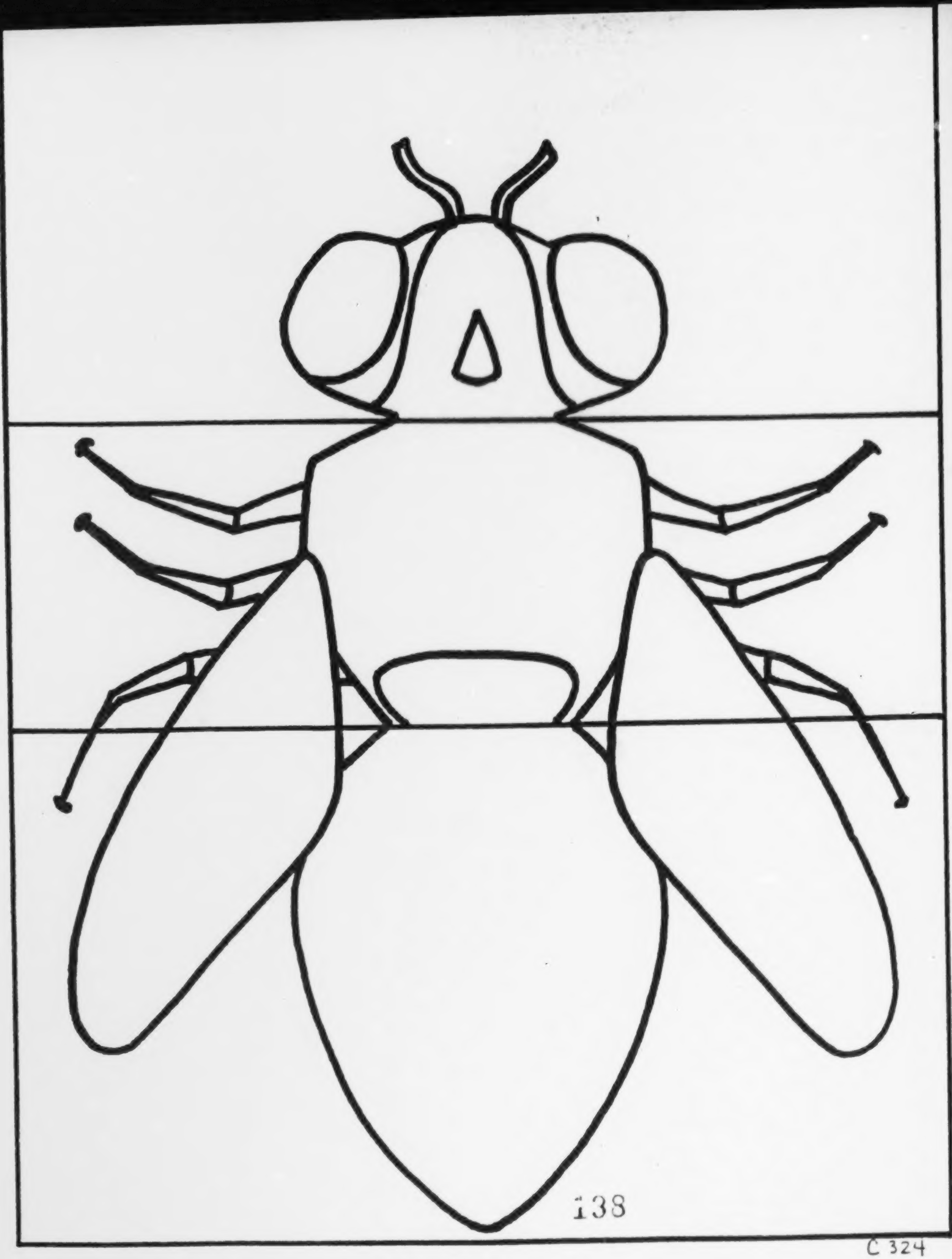
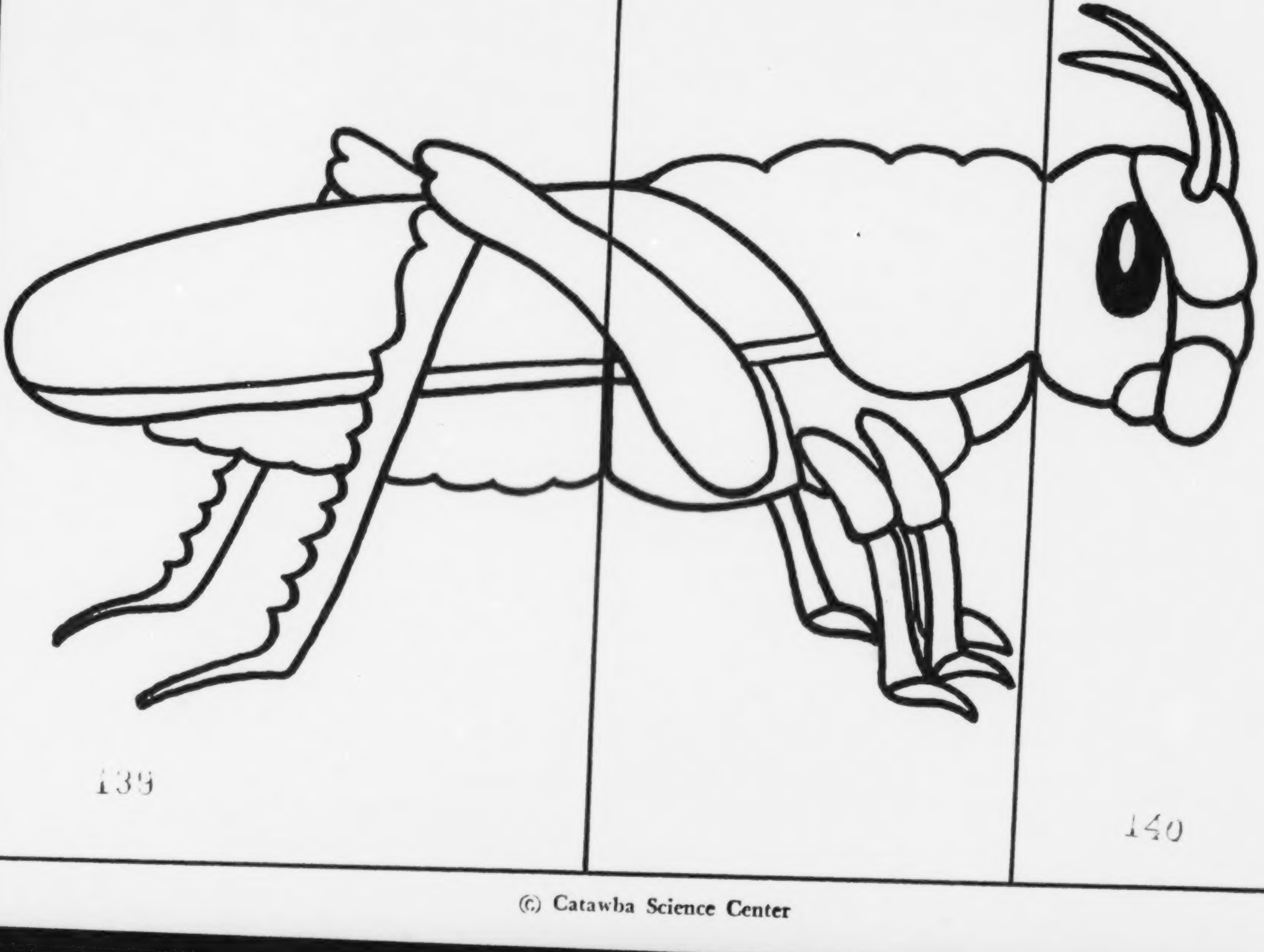
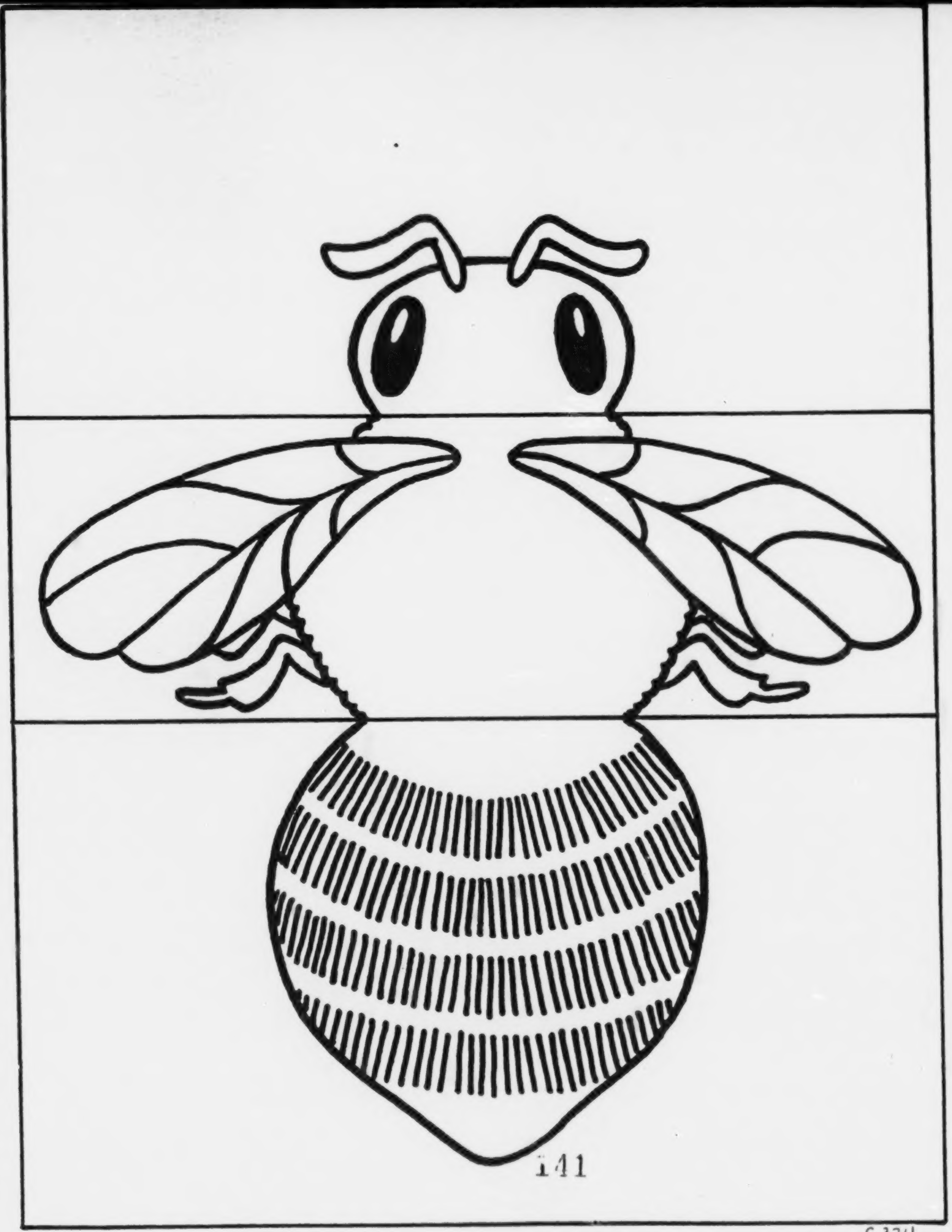


C 324

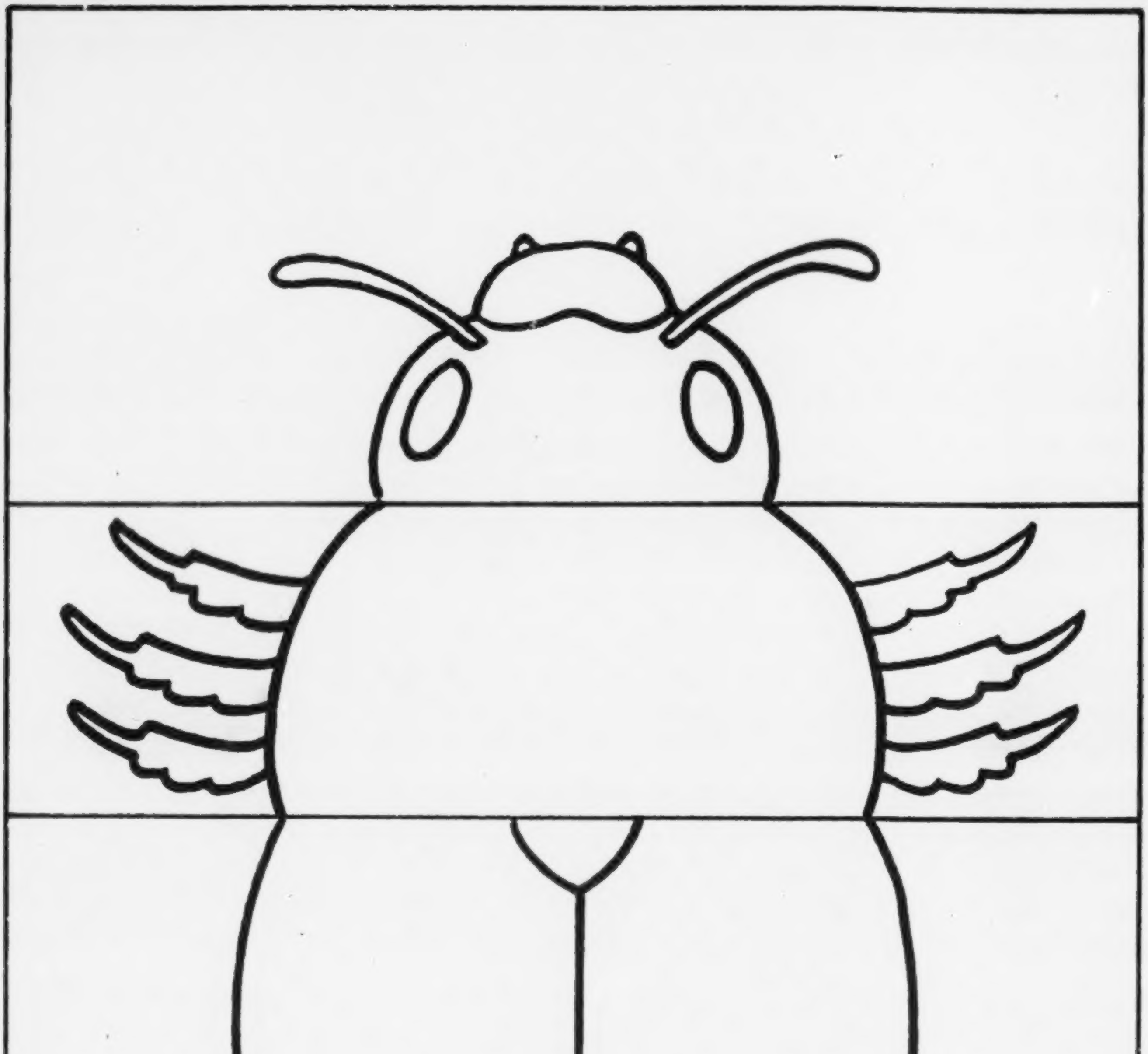


C324



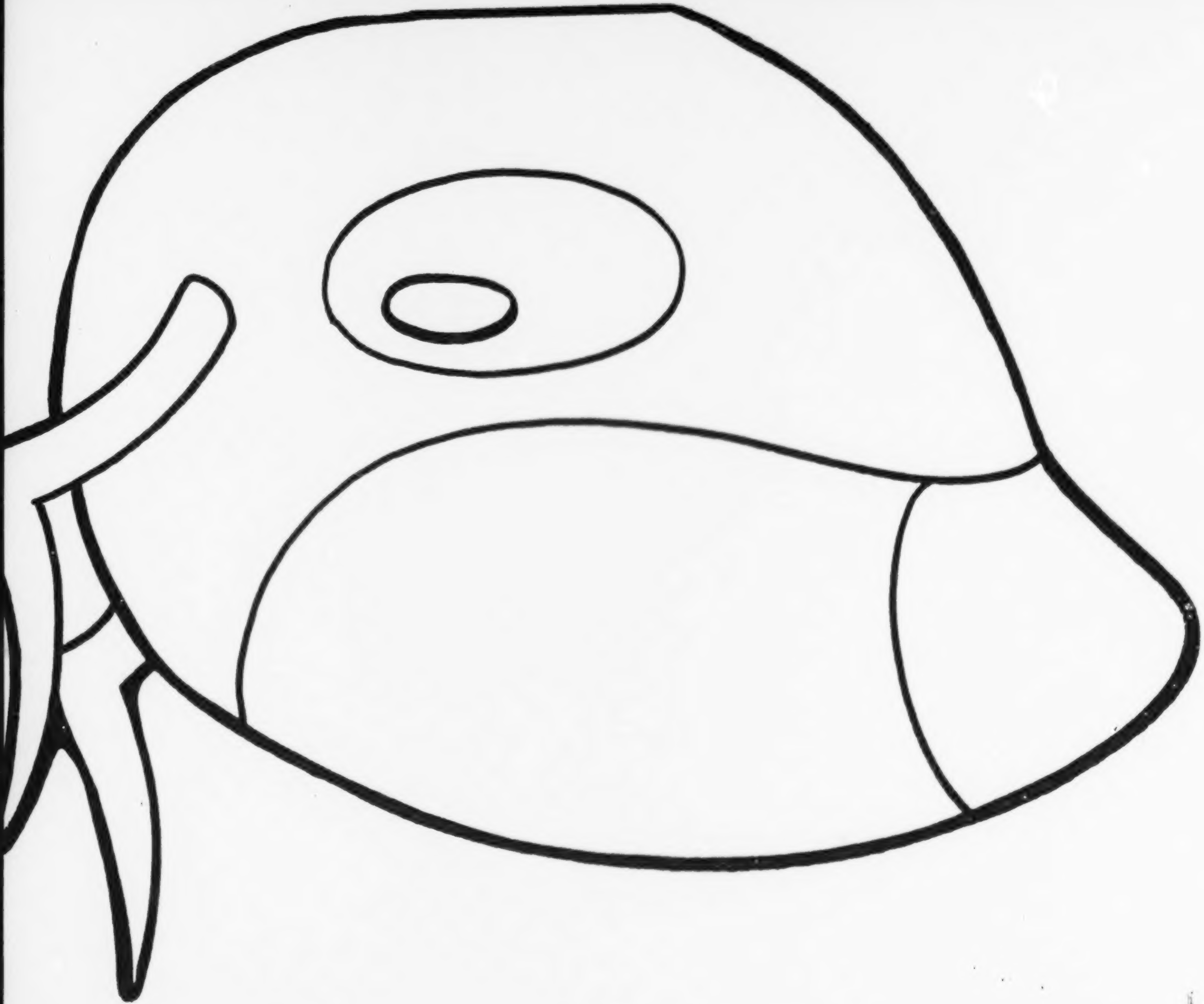
C 324

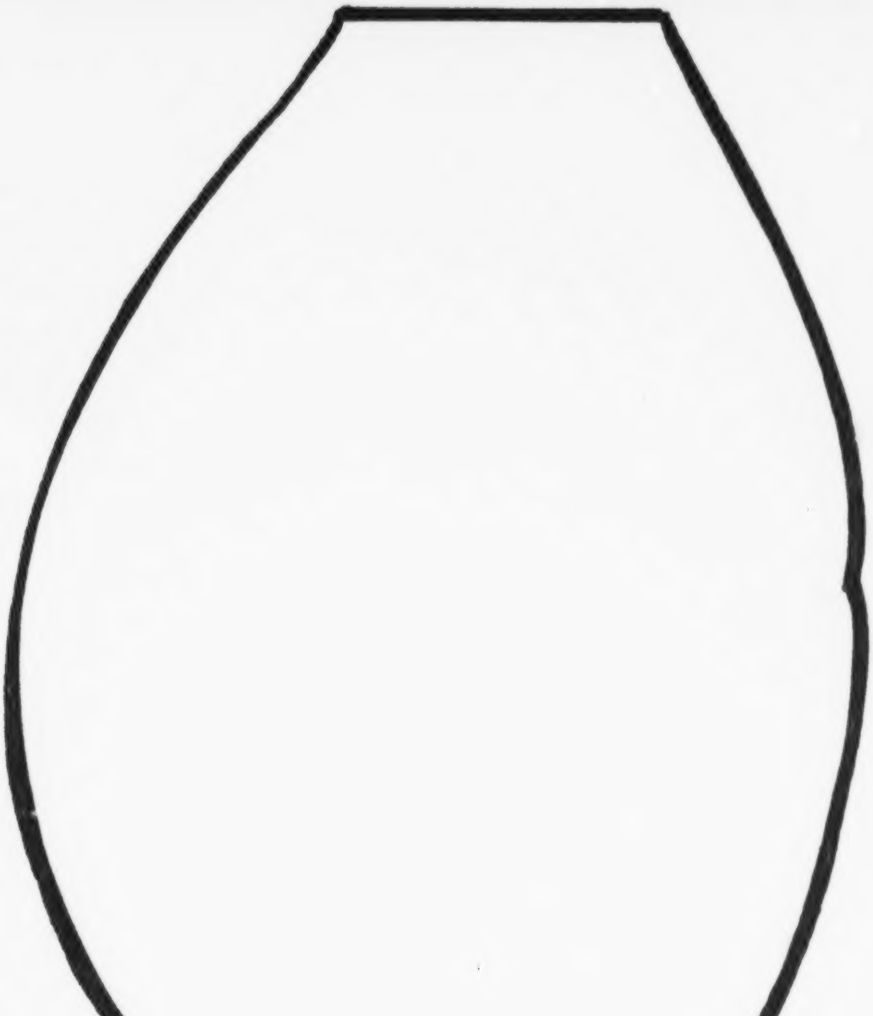
C324



C324

C325





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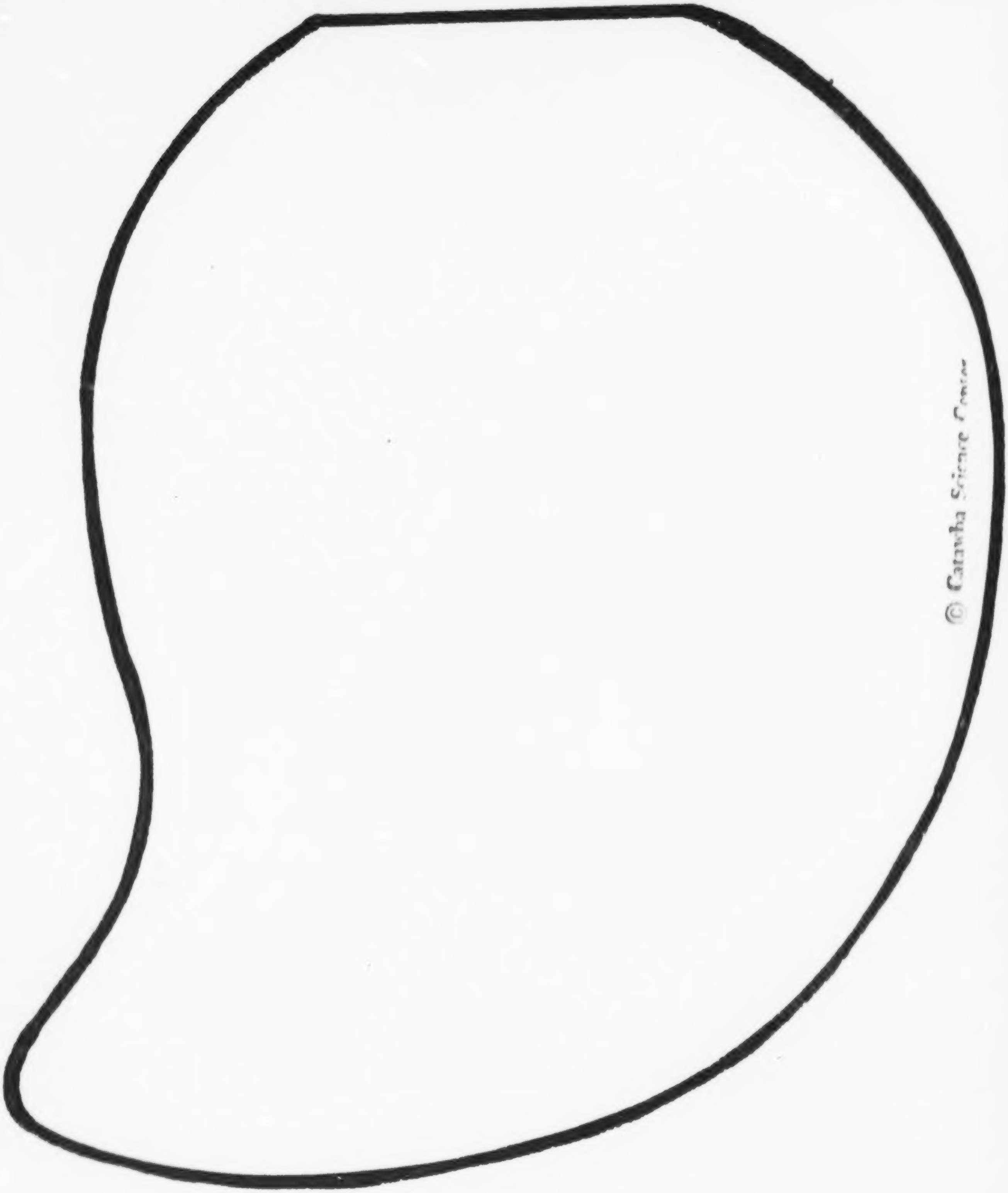

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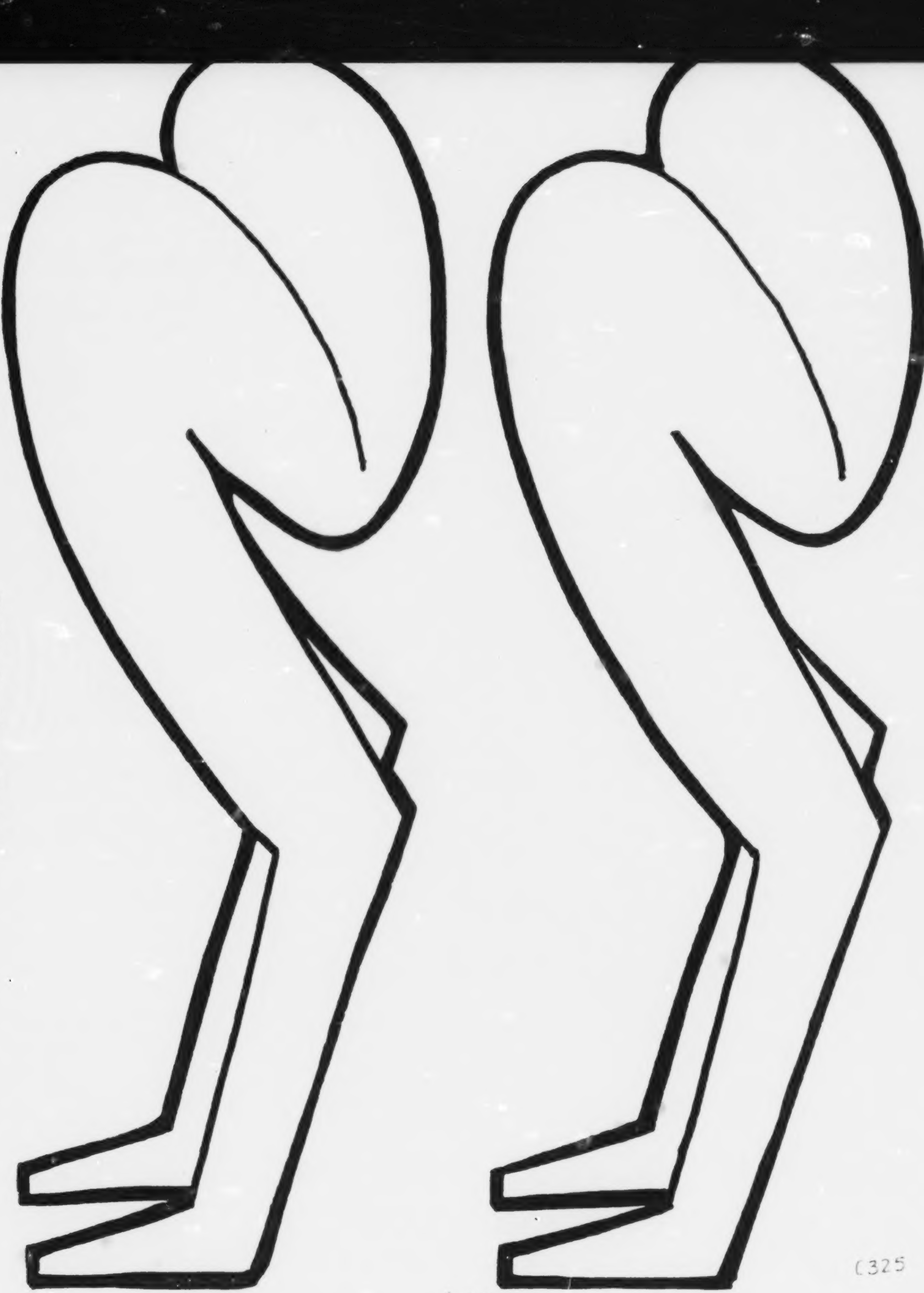
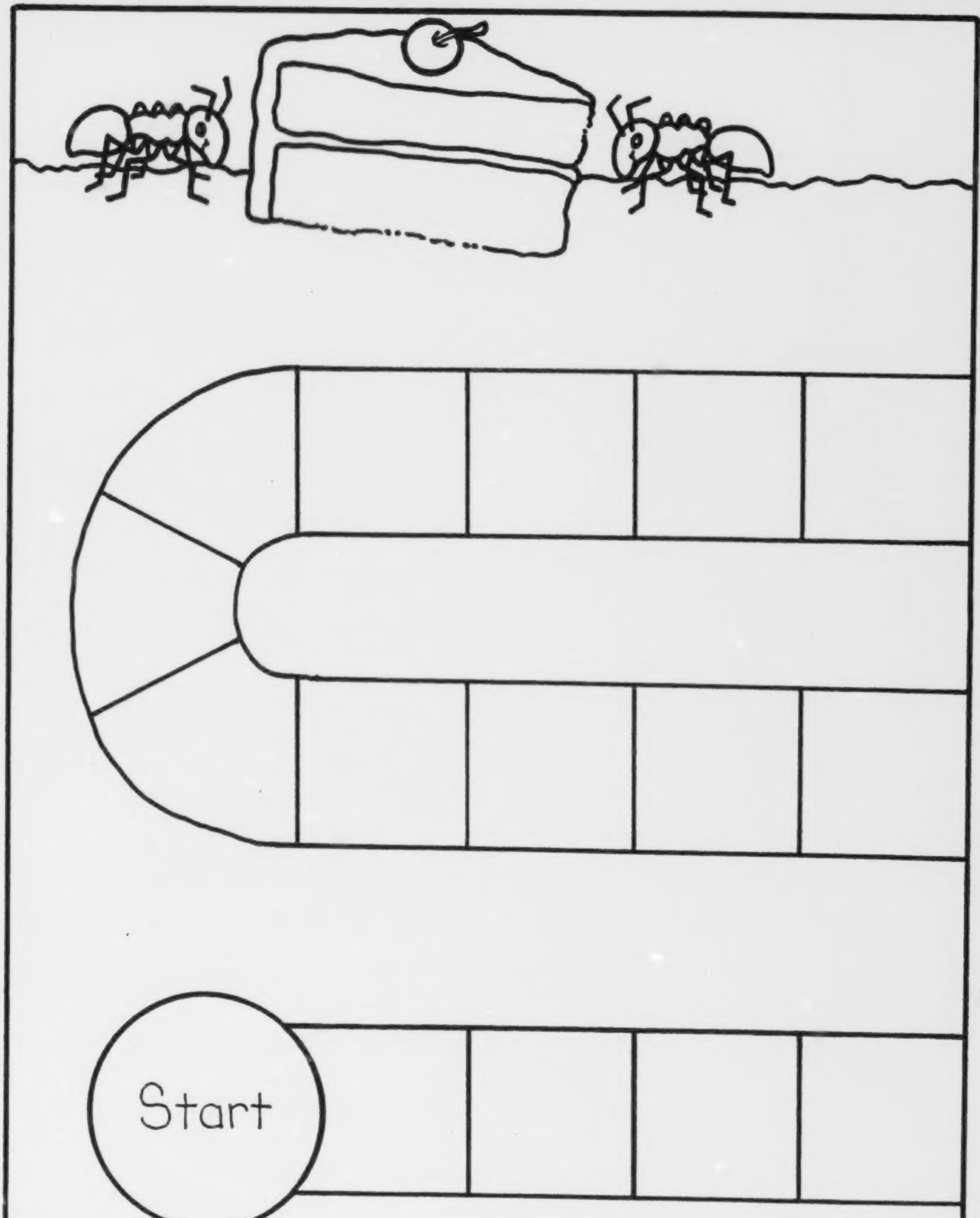


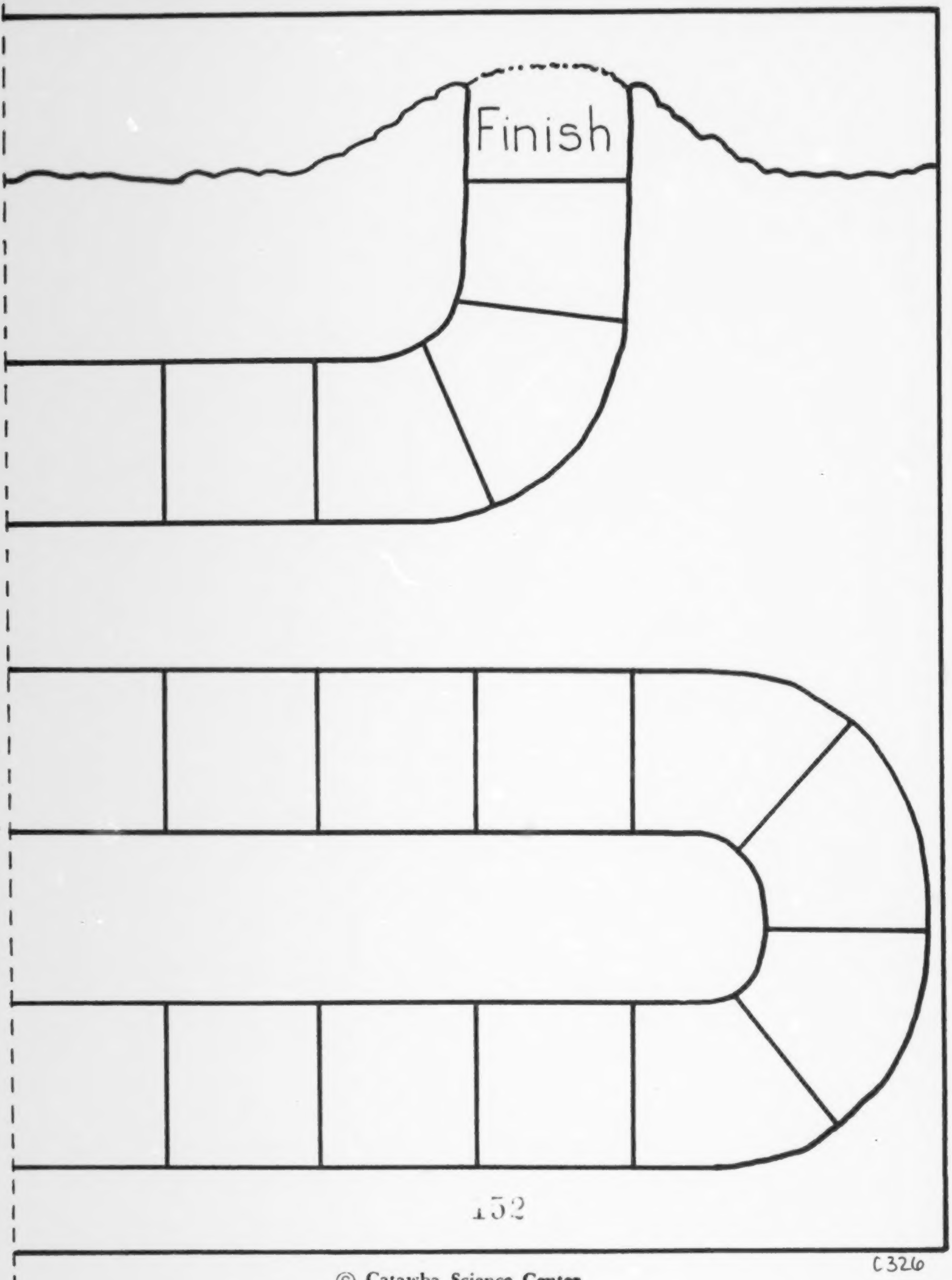
C325

C325



Tape or glue right side here.

C326



Cut away along broken line here.

C326

Make Ants on a Log.

You will need:

celery

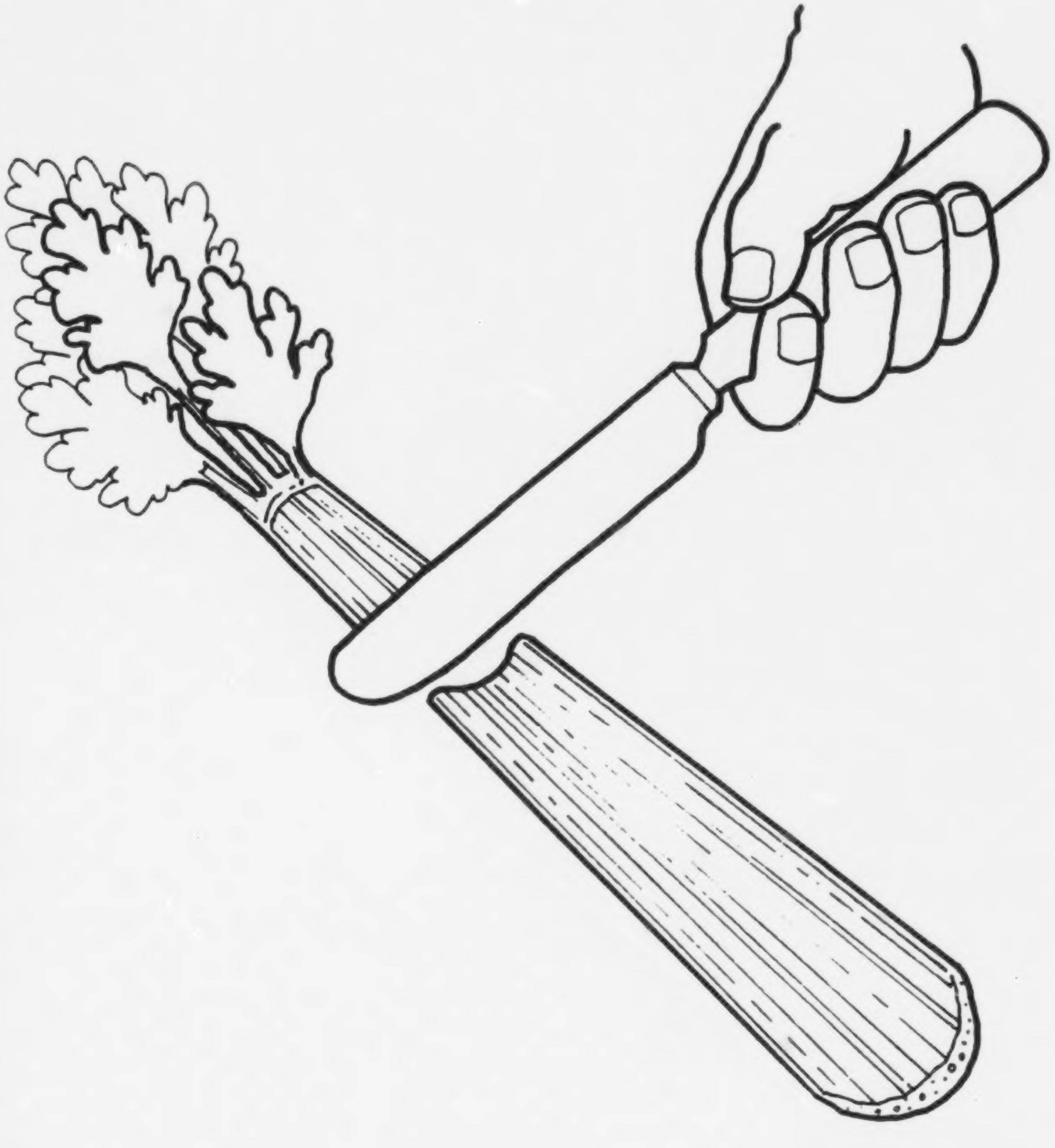
peanut butter

raisins

knife

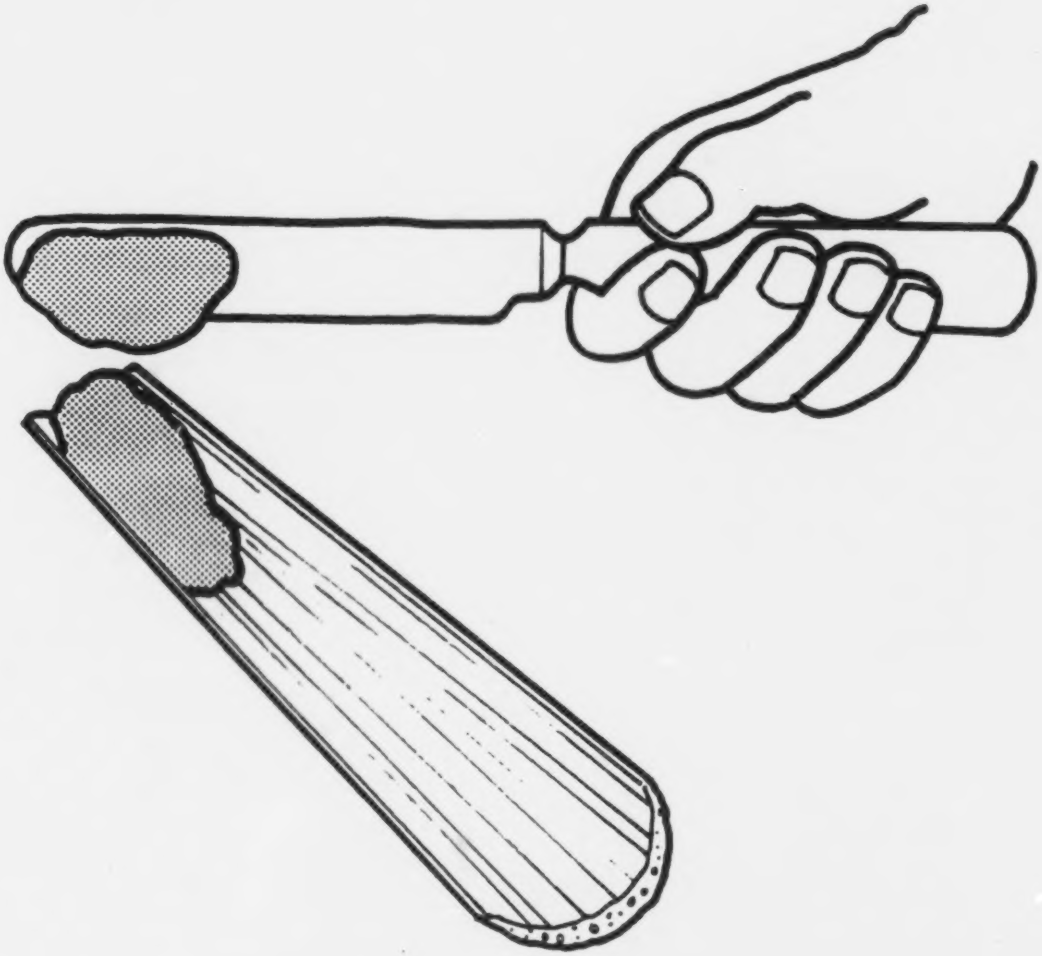
Wash hands.

Cut celery.



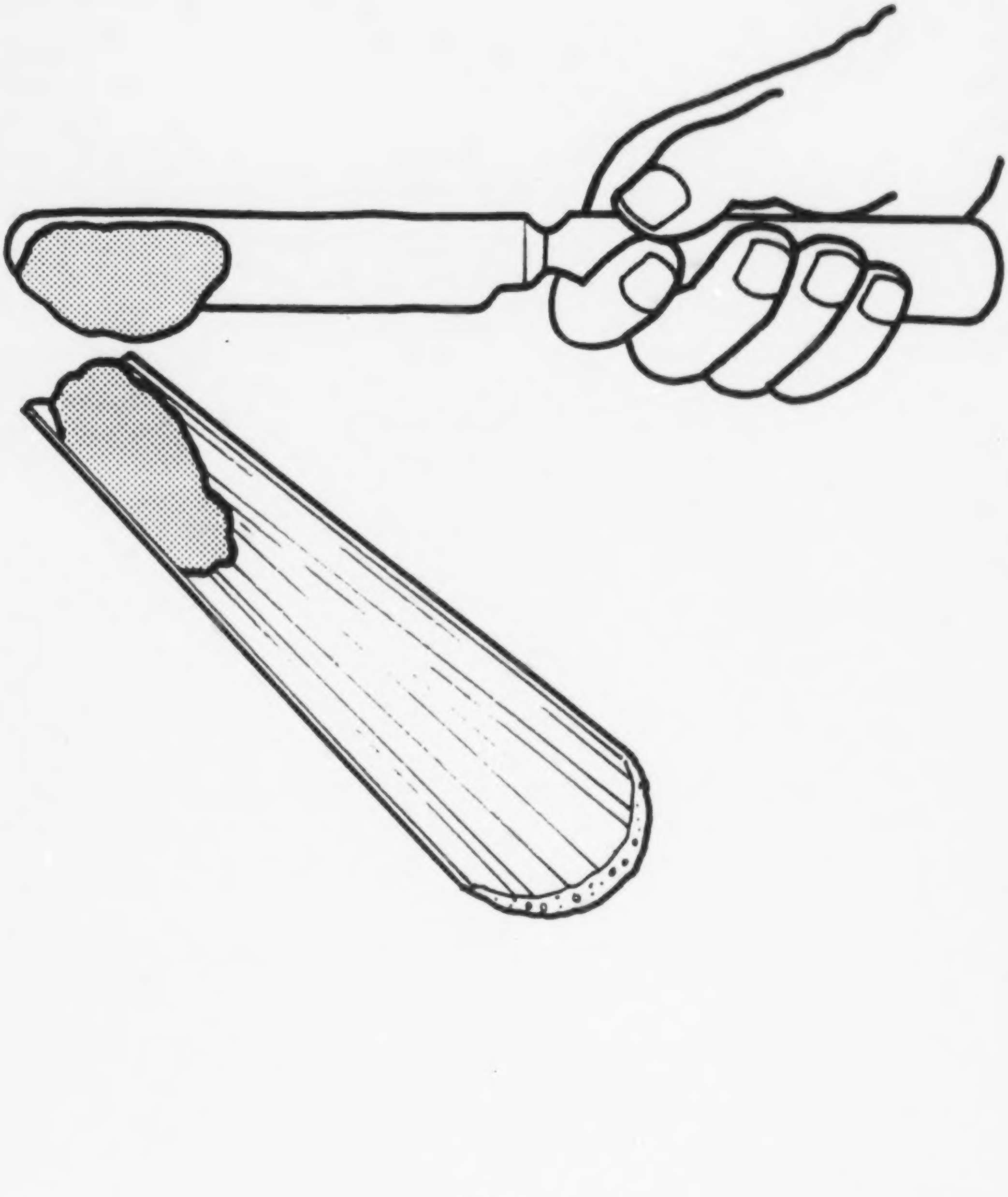
C327

Add peanut butter.



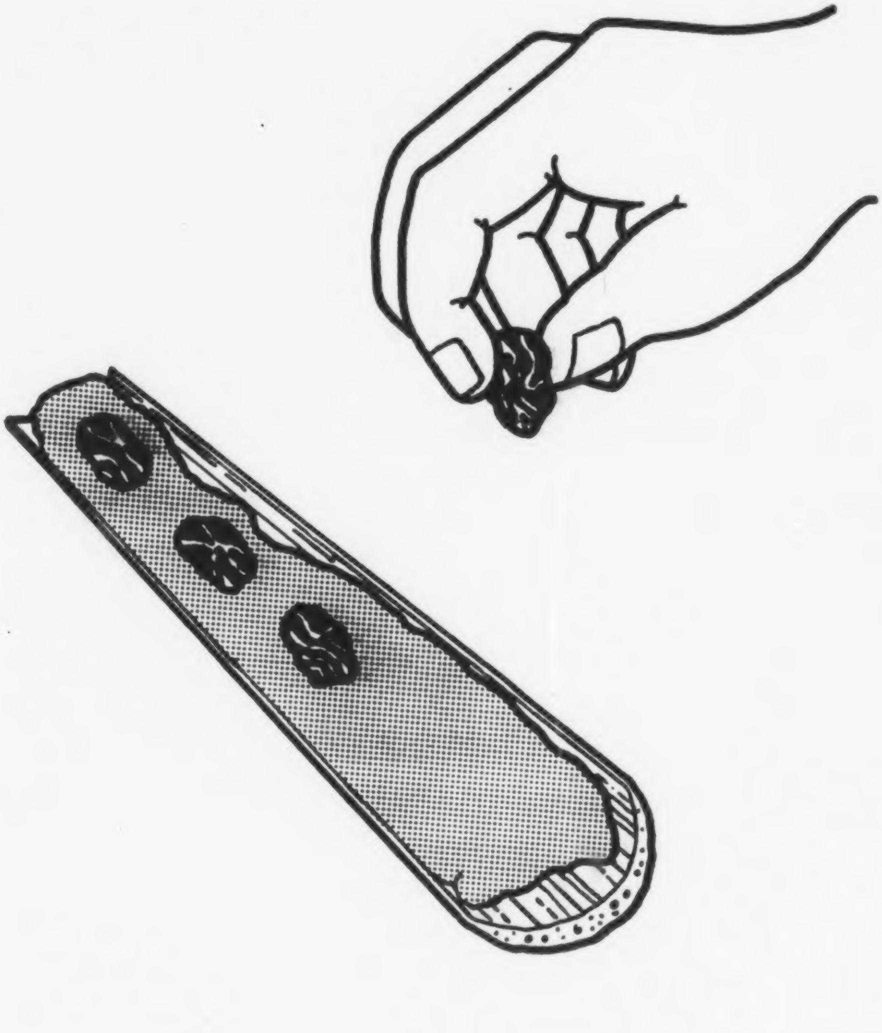
C327

Add peanut butter.



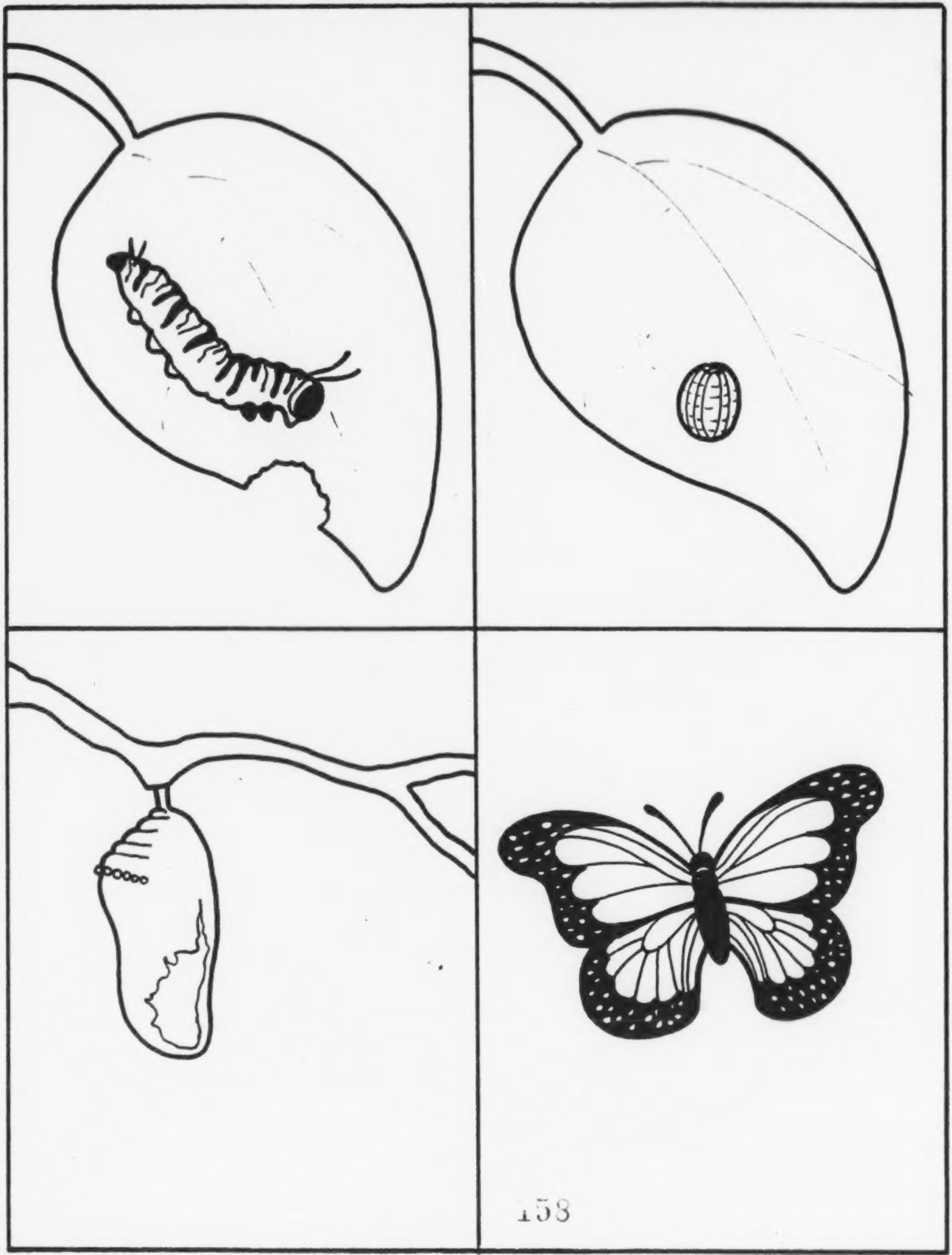
C327

Add raisins.

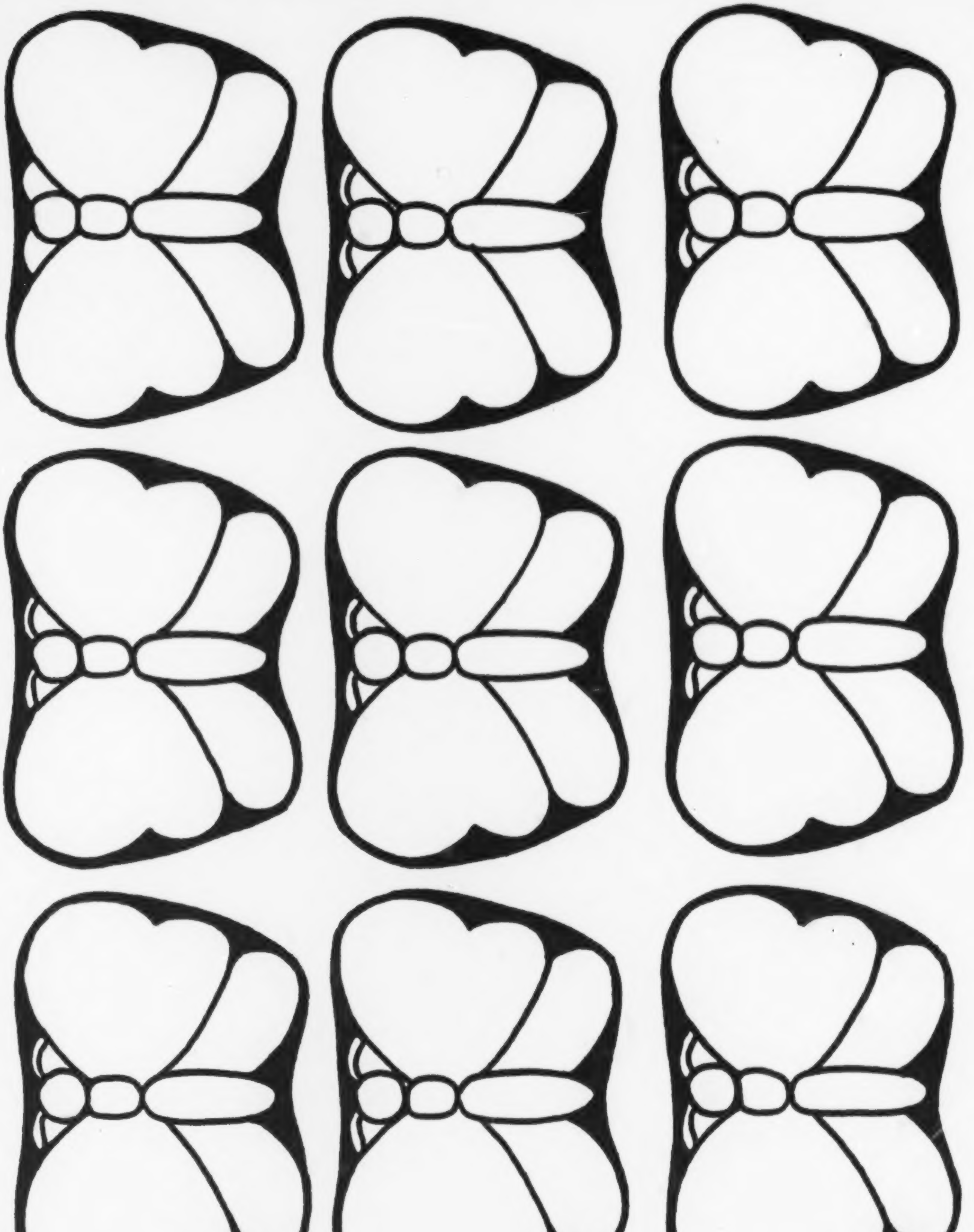


C327

Monarch butterfly



C 332



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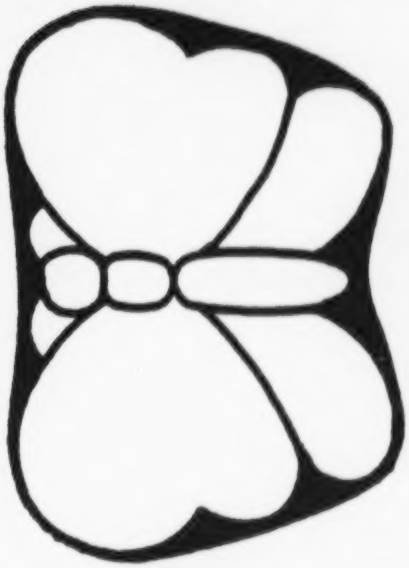

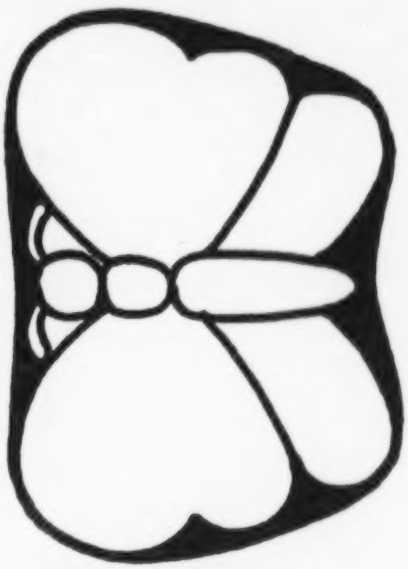

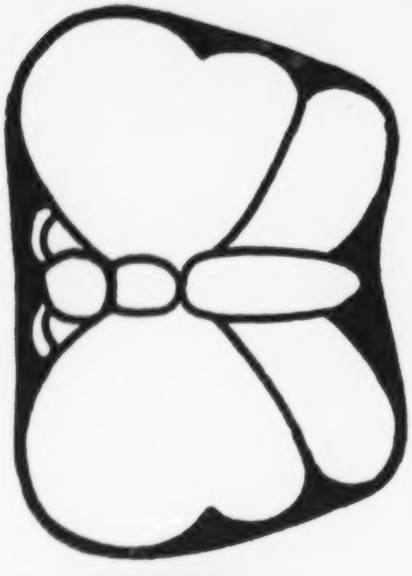

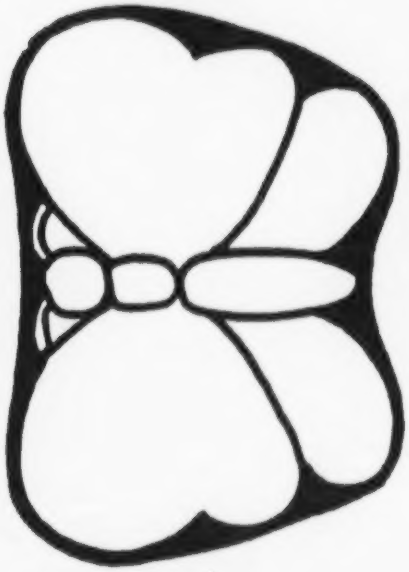

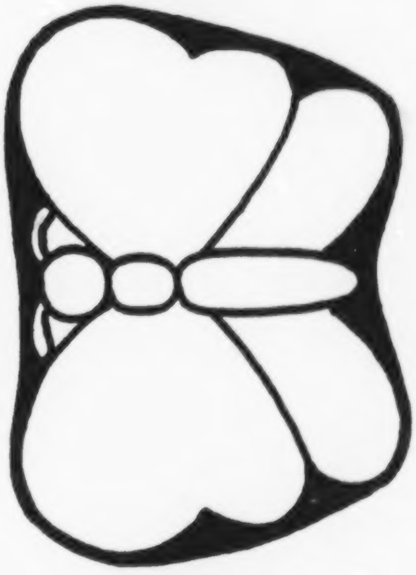

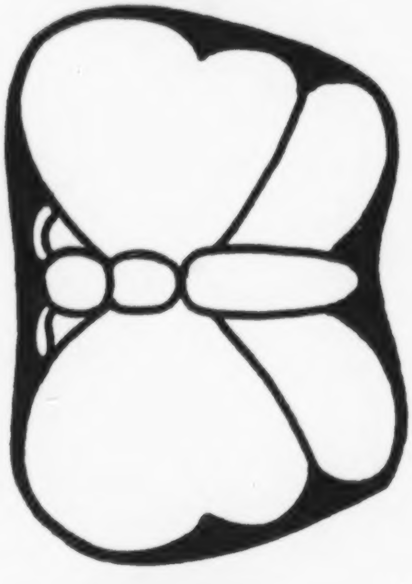

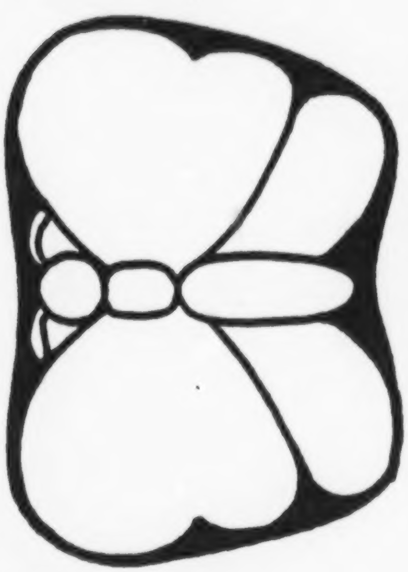

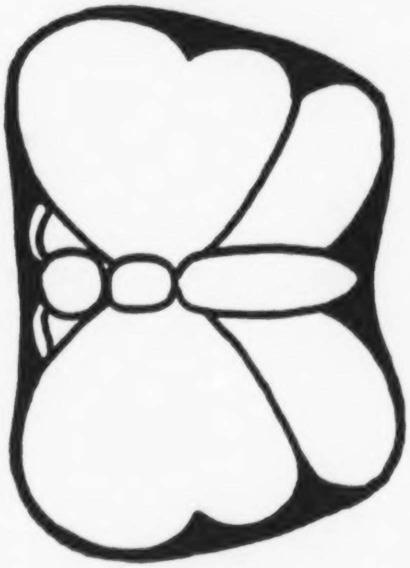

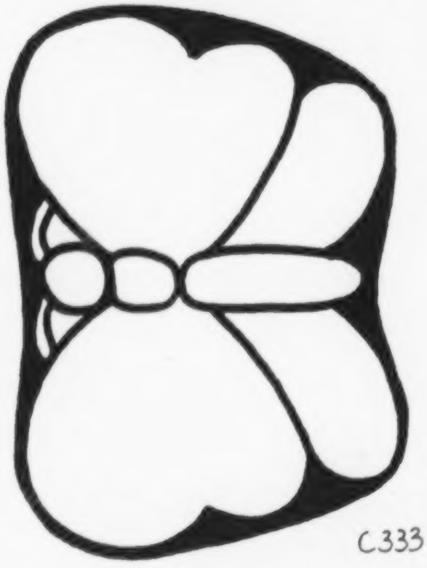

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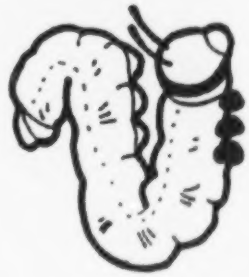

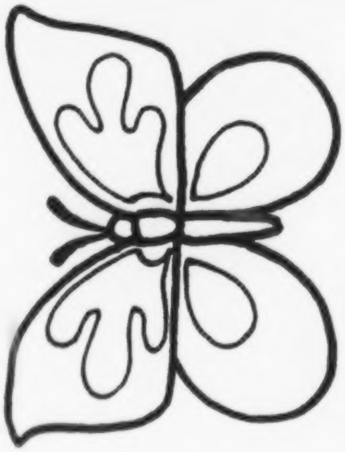

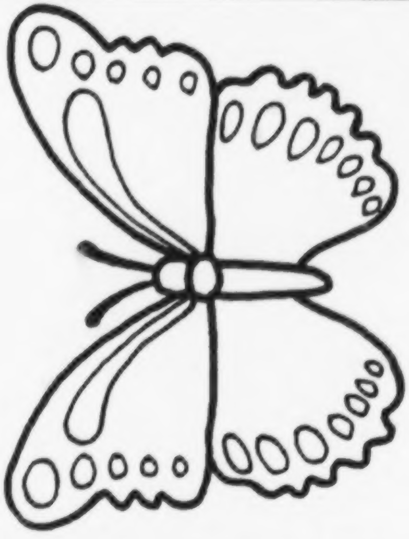

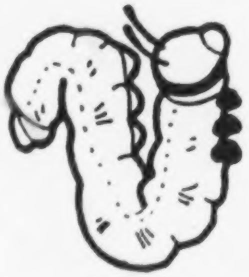

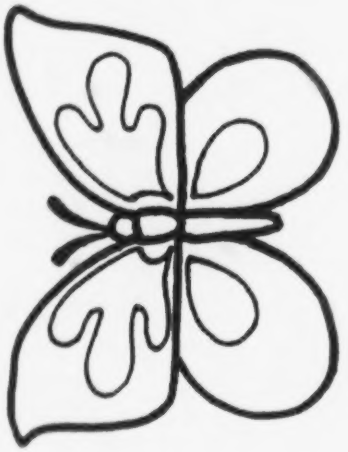

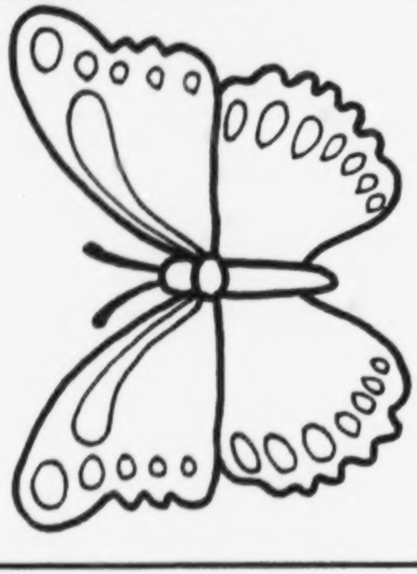

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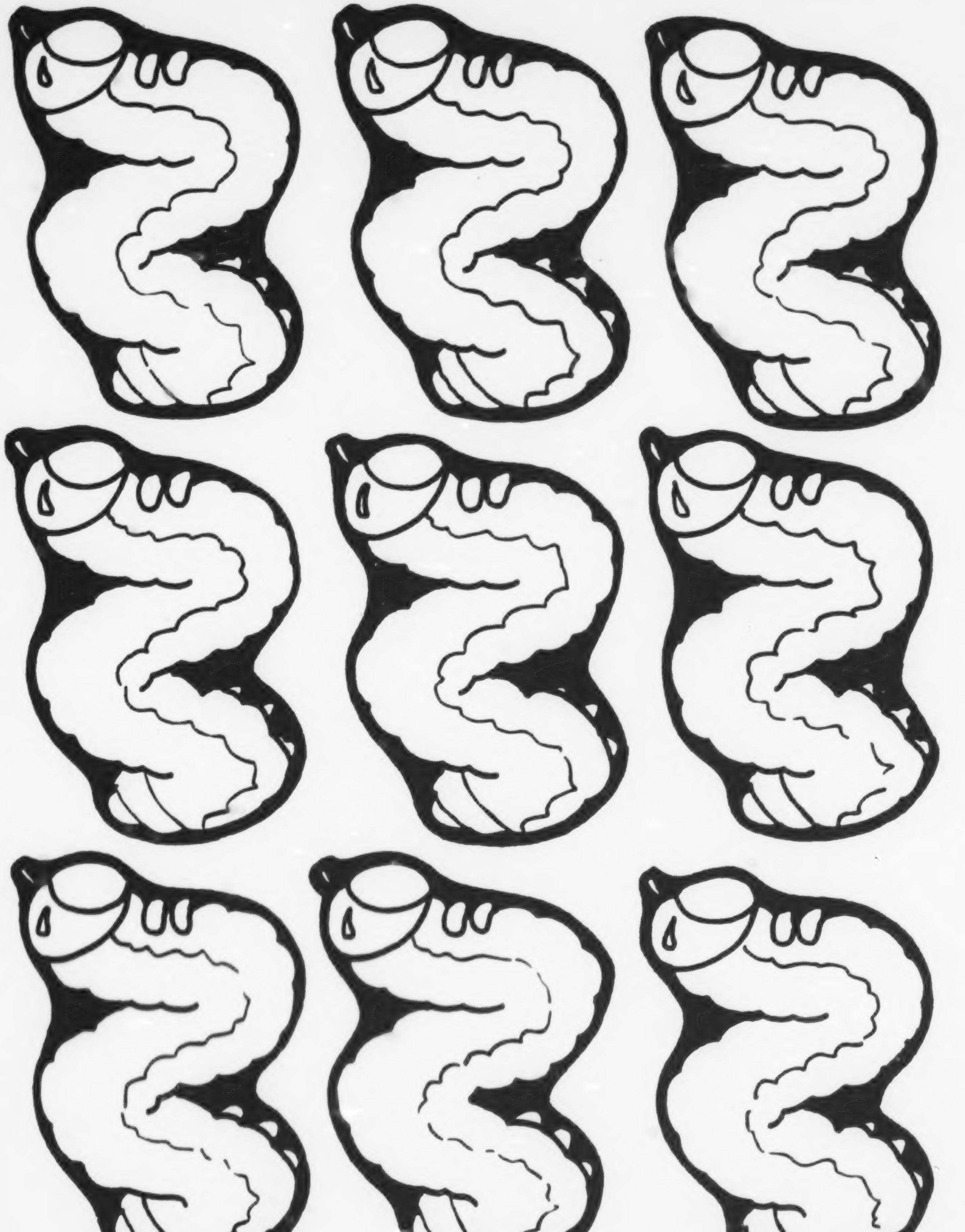

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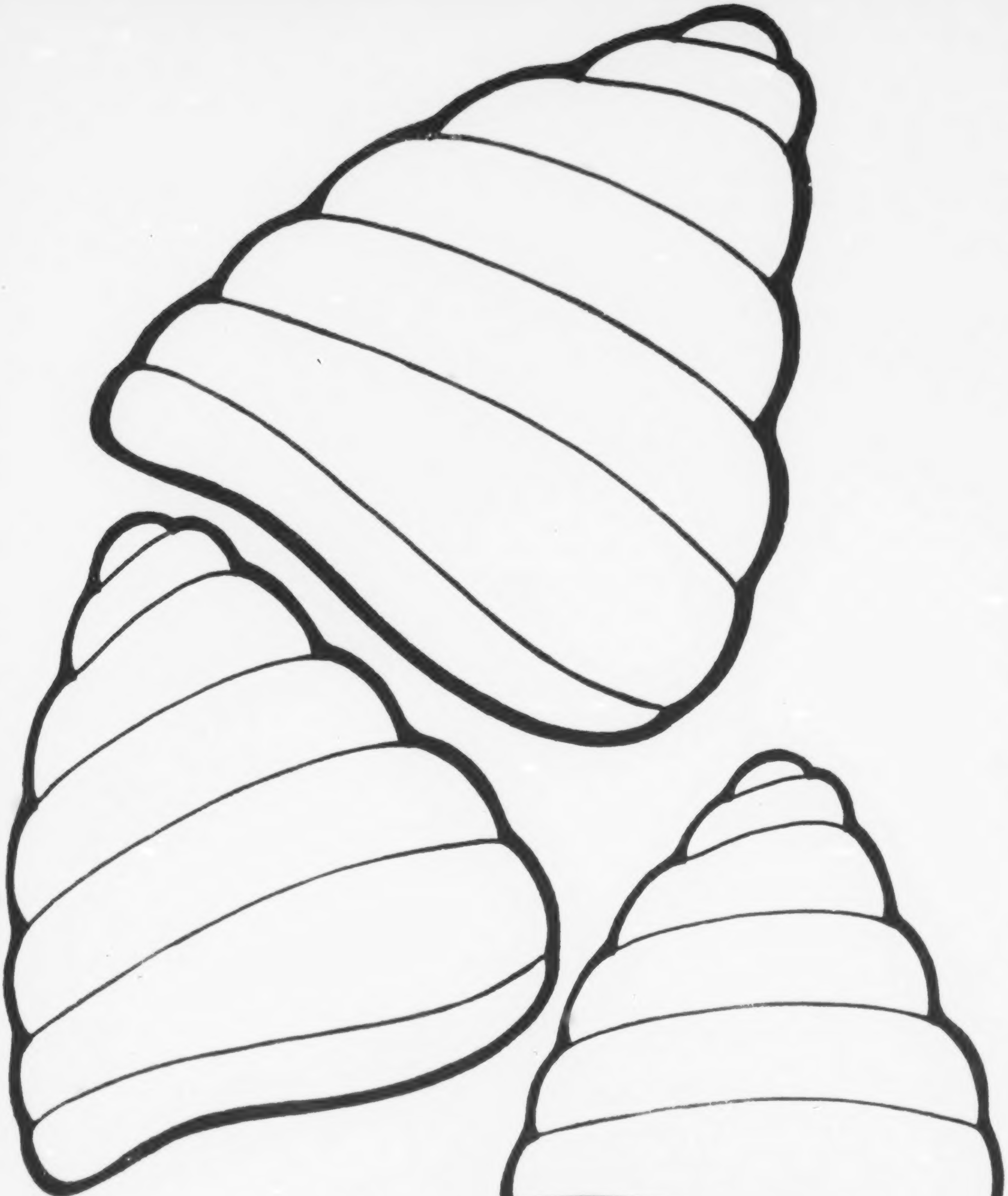

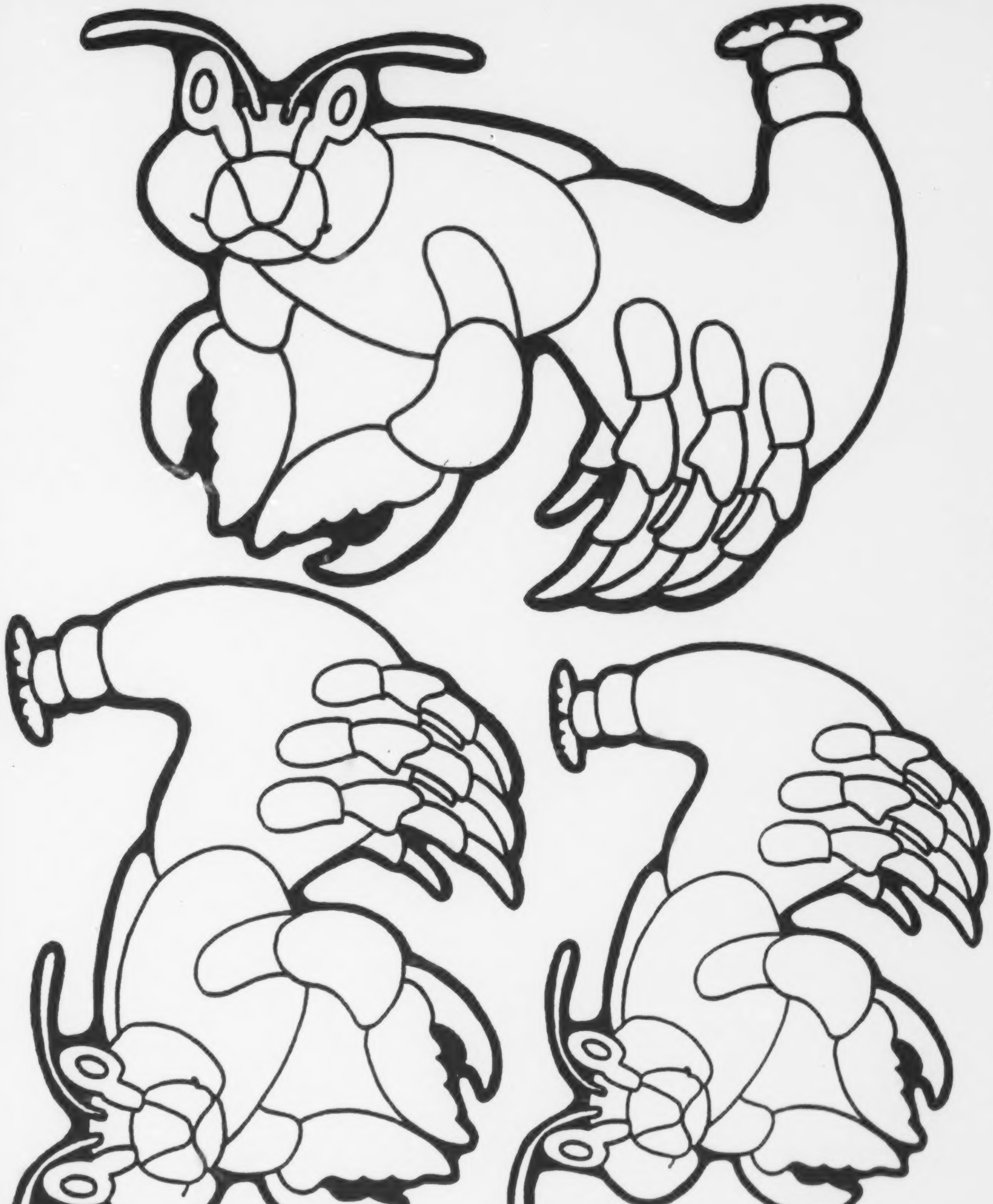

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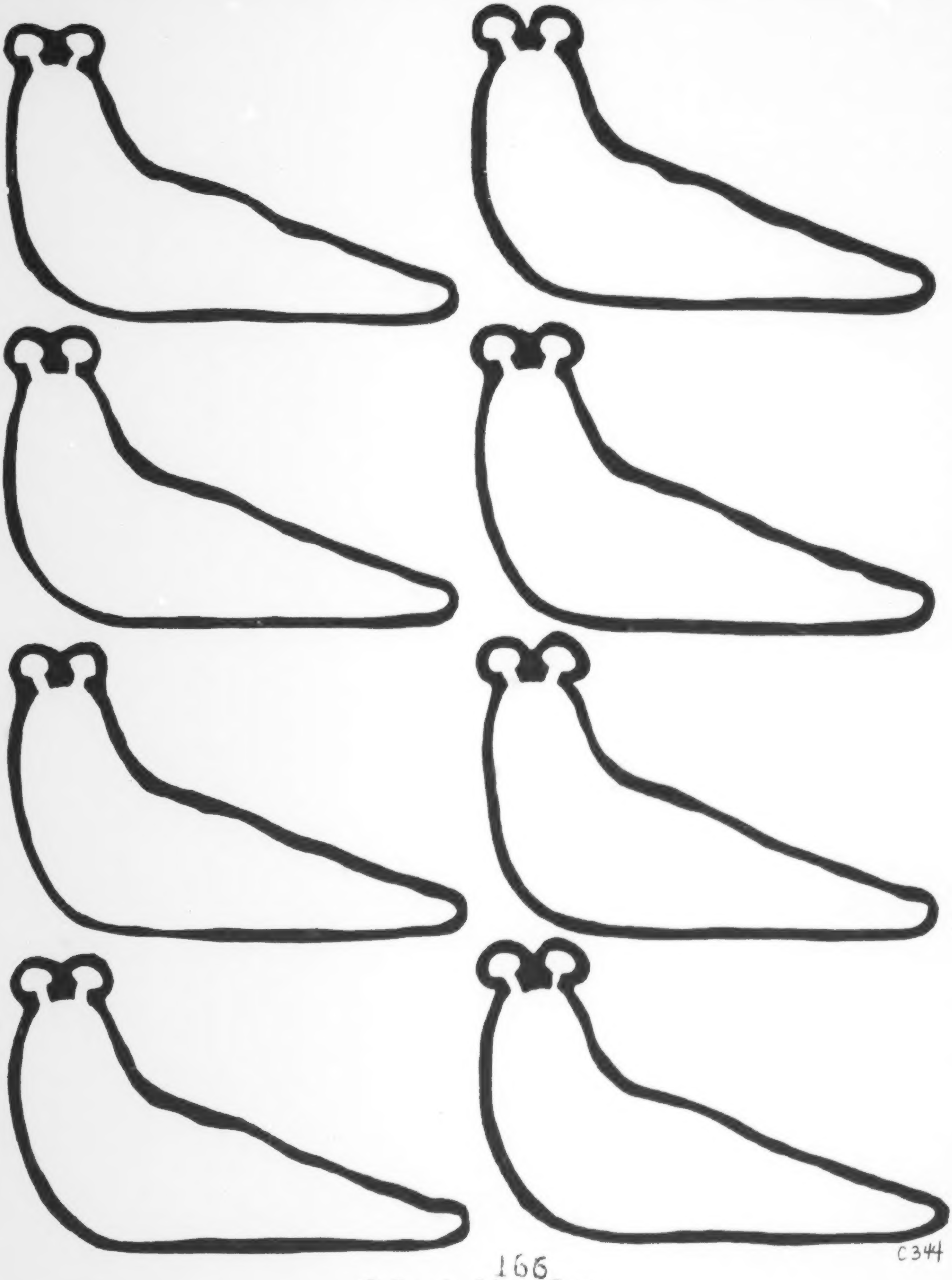

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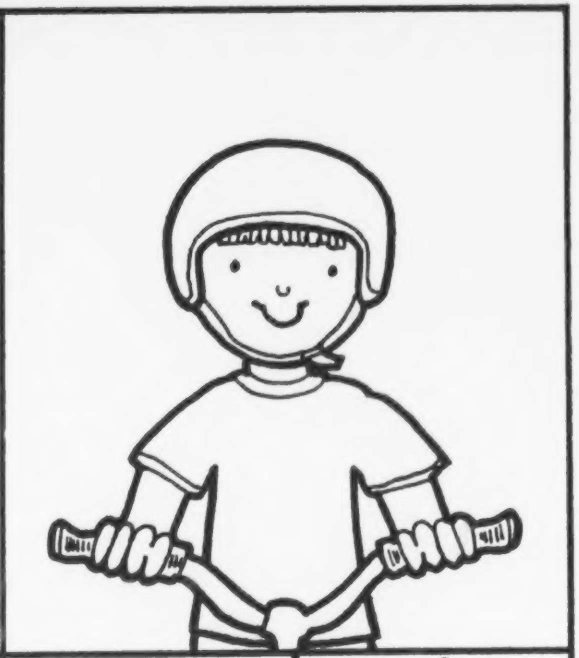

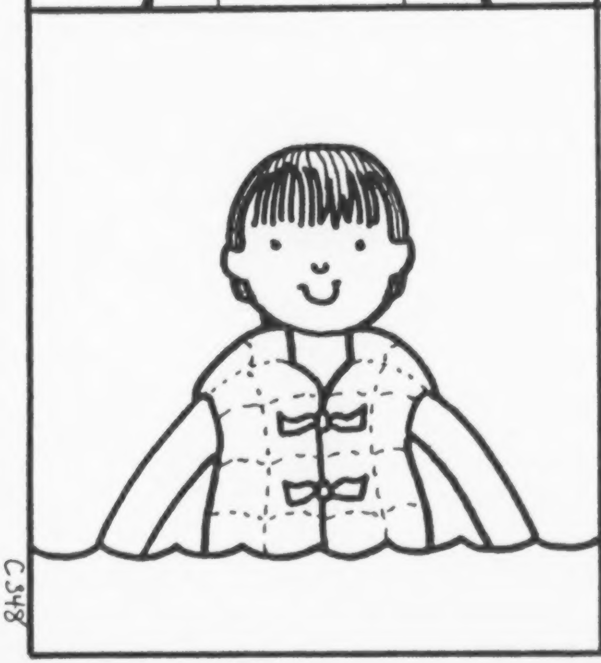

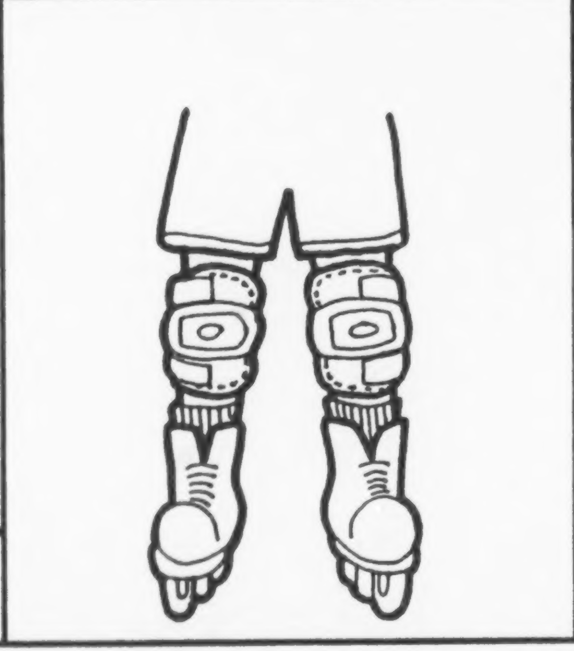

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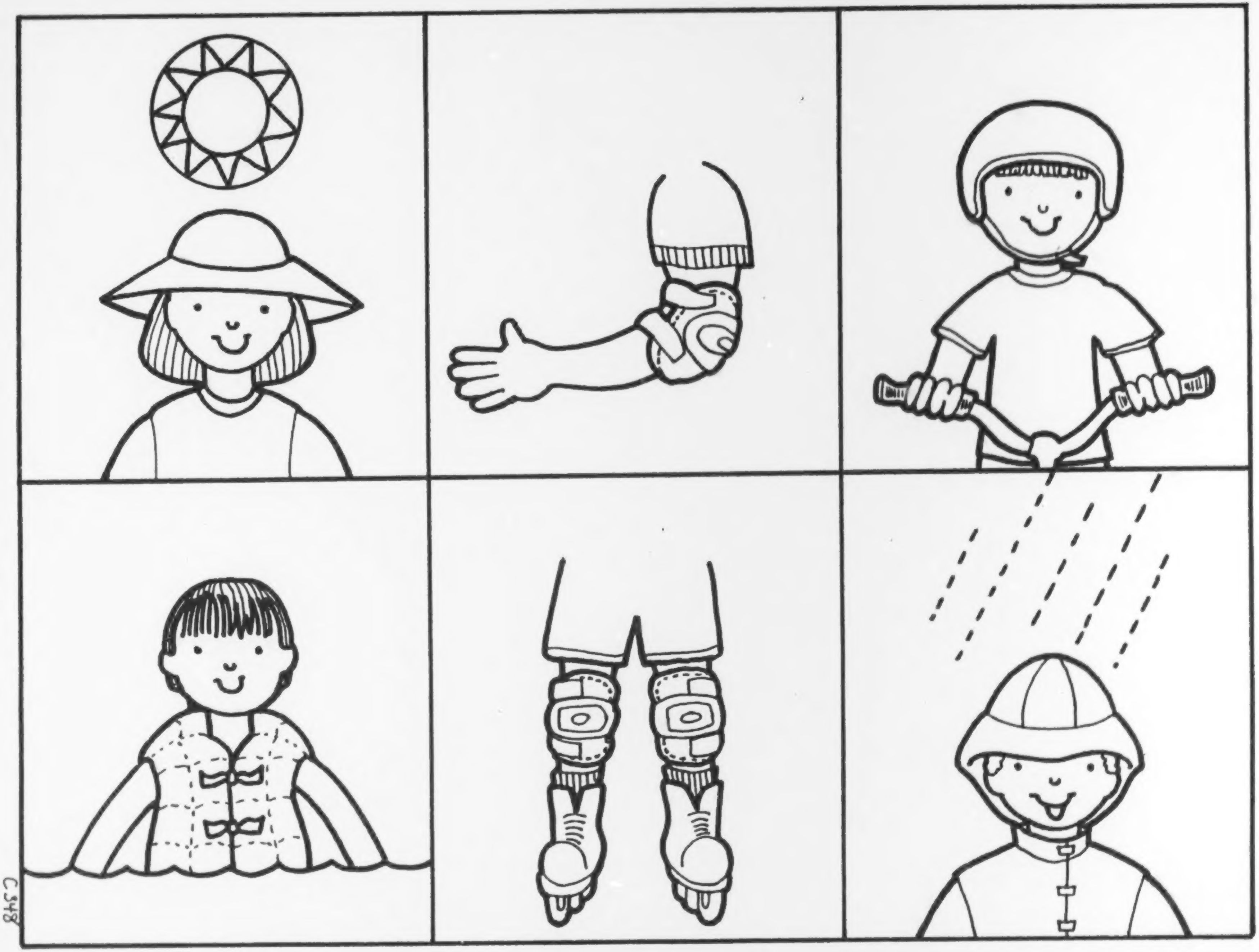

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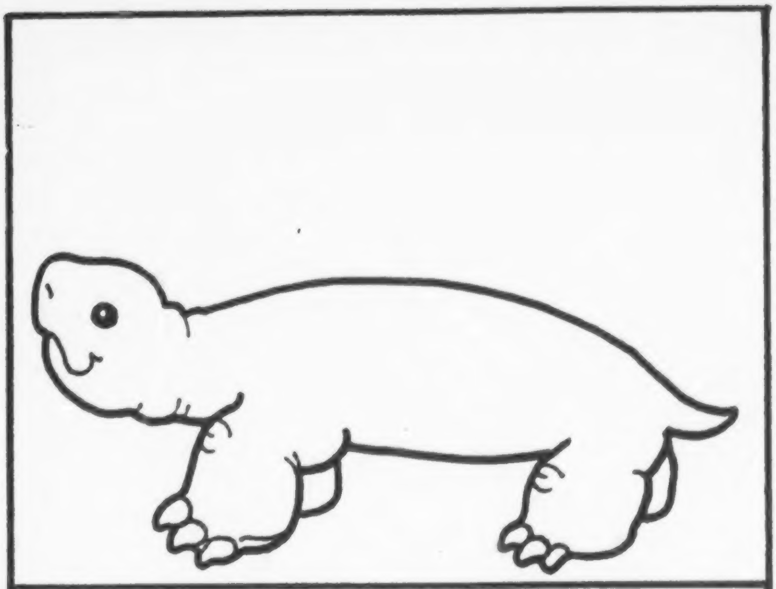
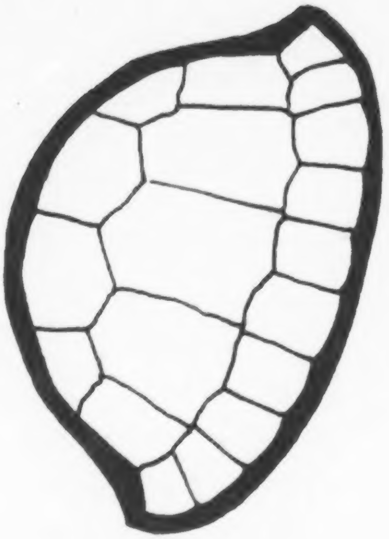
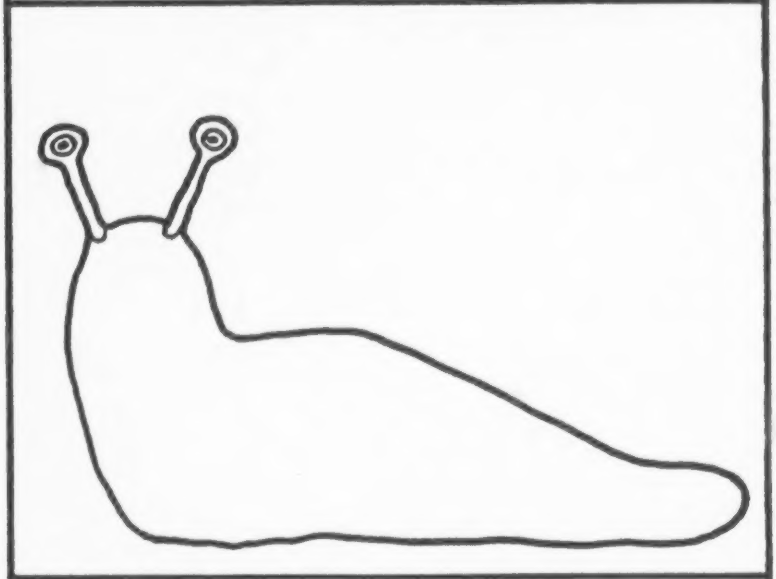
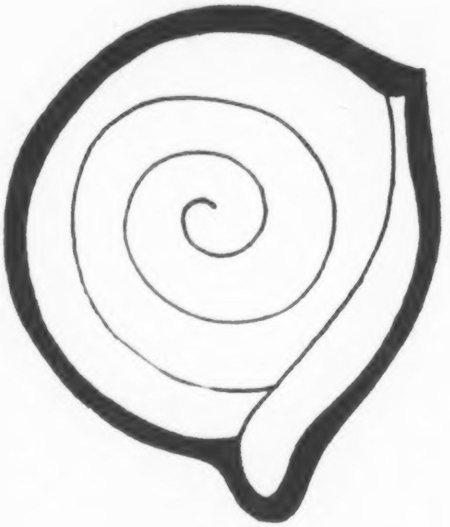
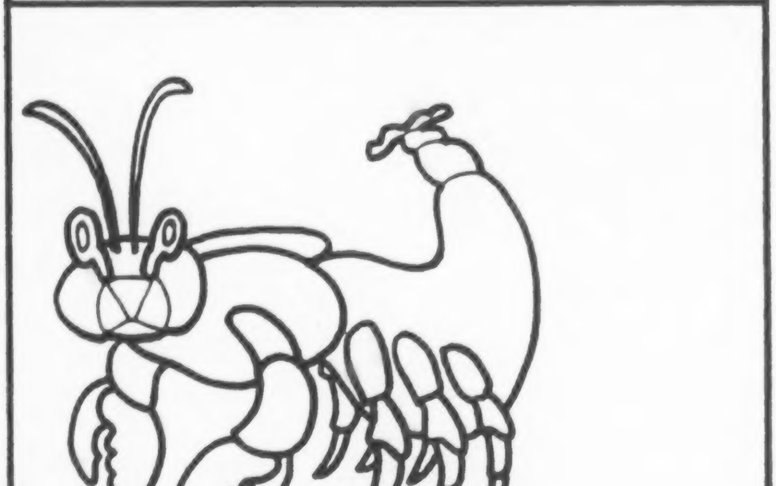
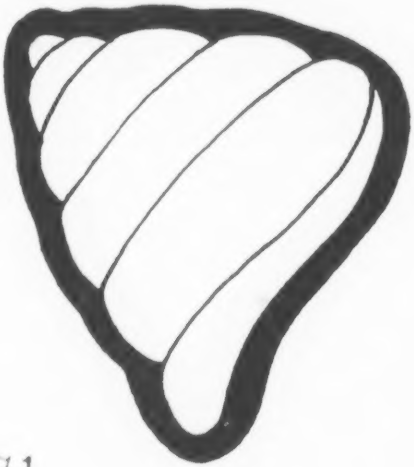






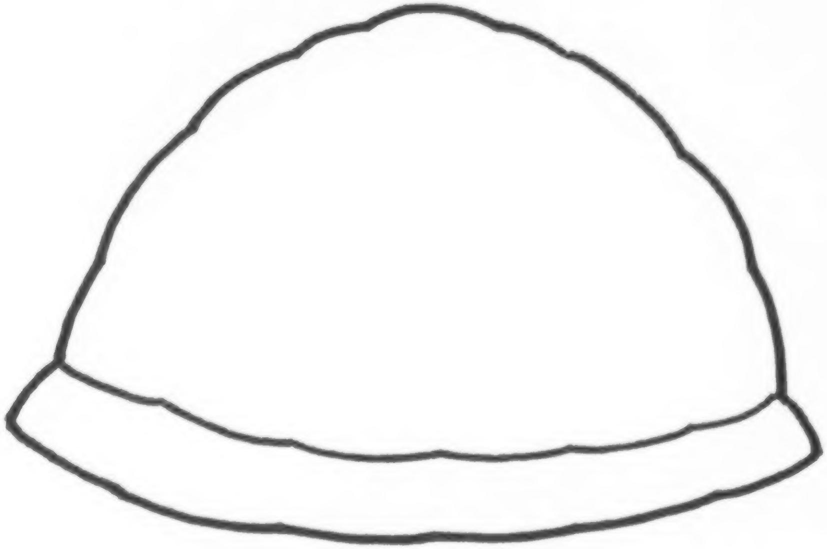






C341

C342



C342

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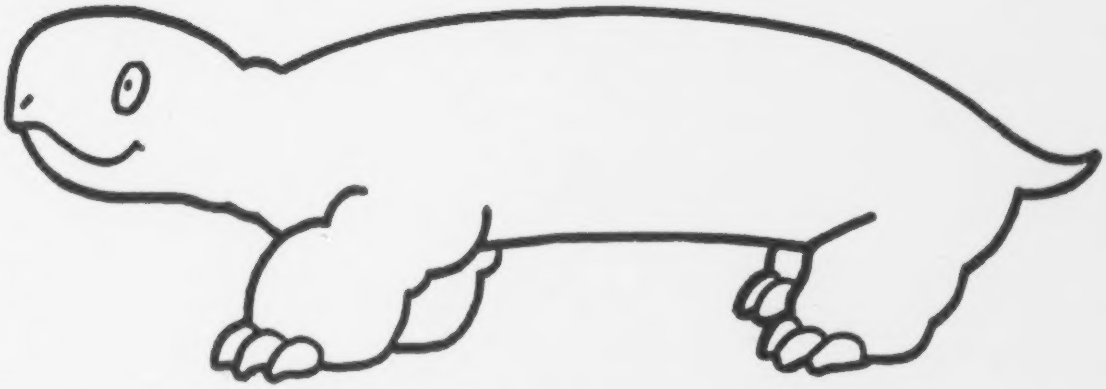
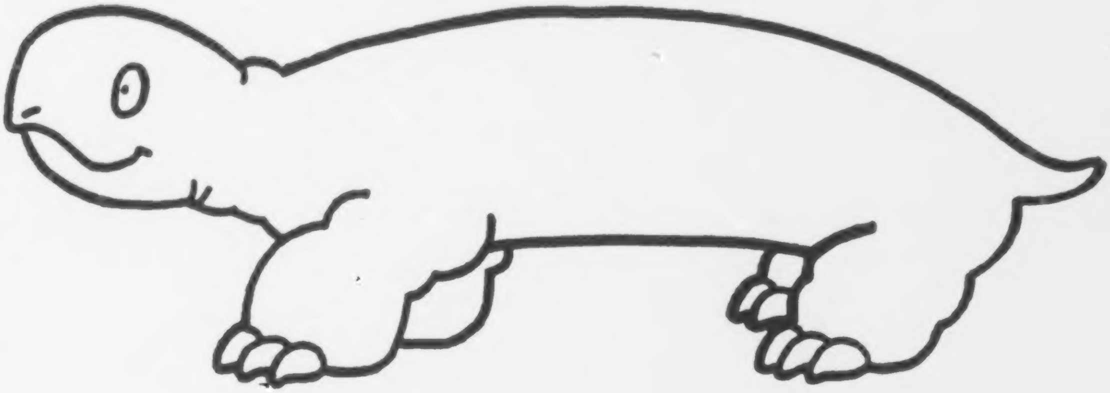
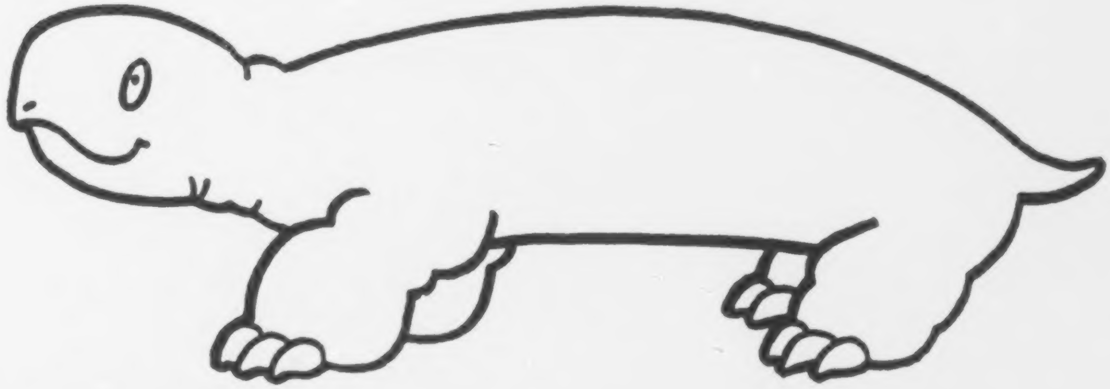
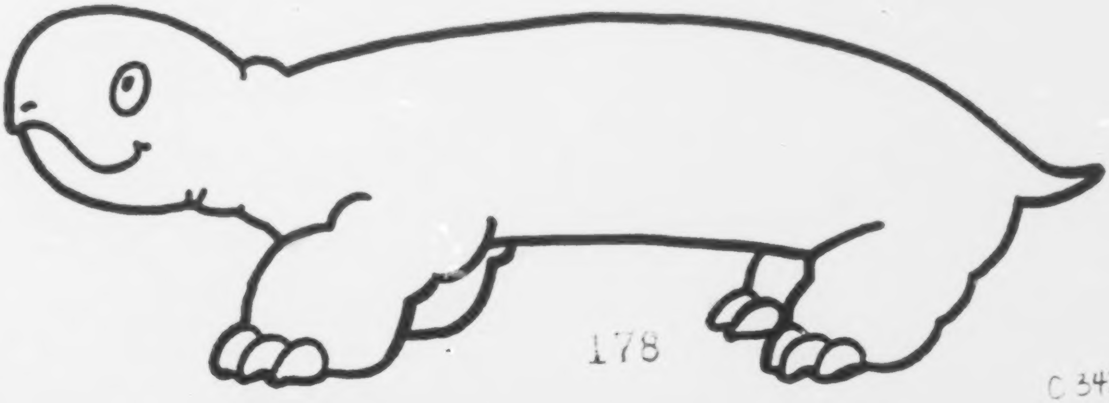
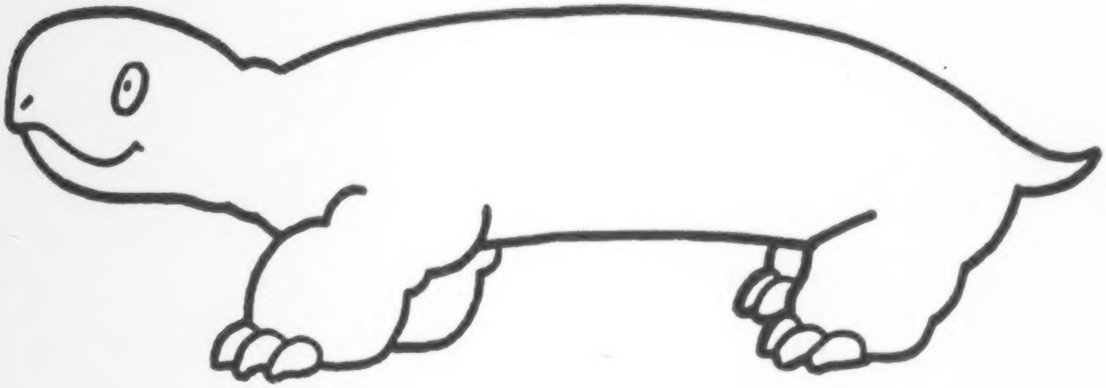


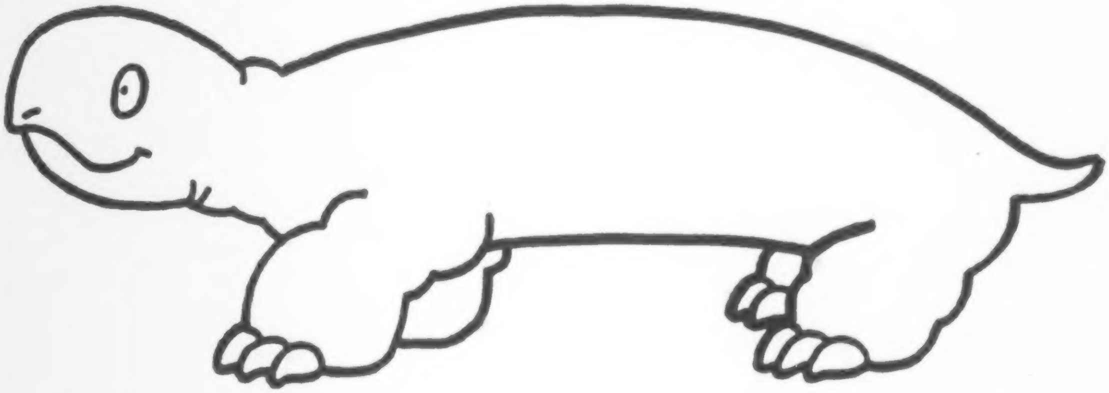


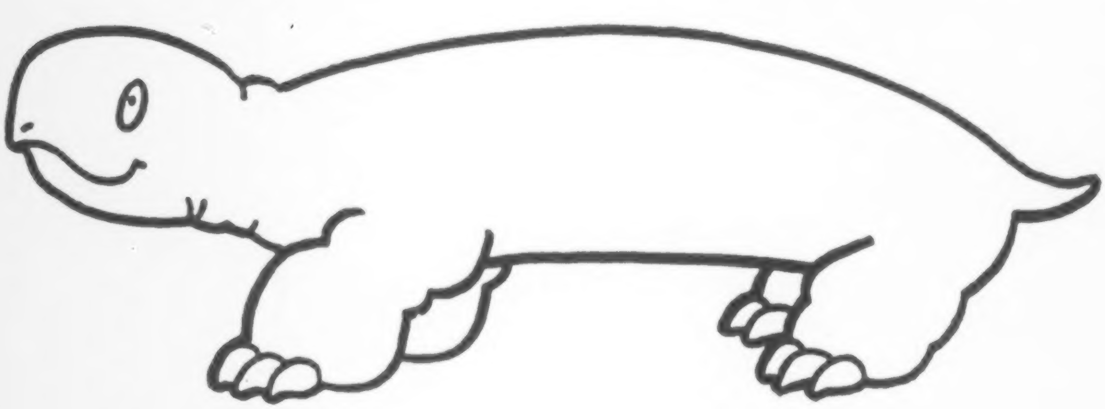


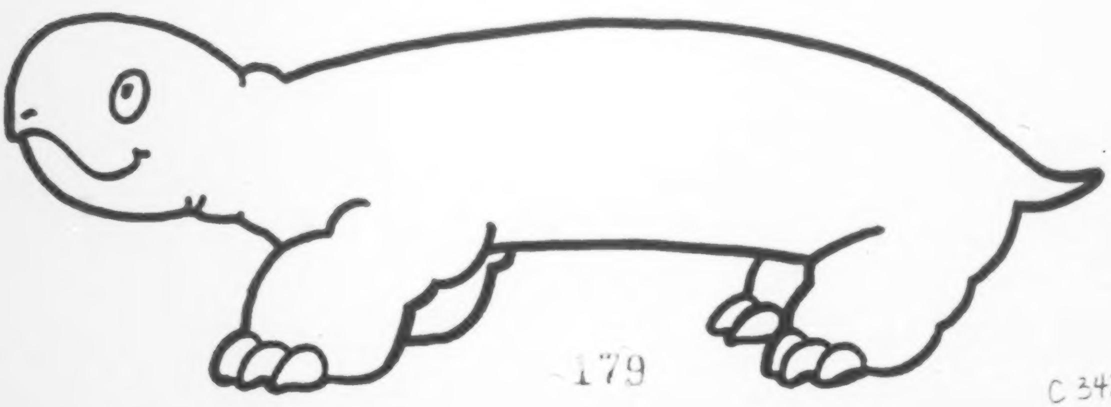


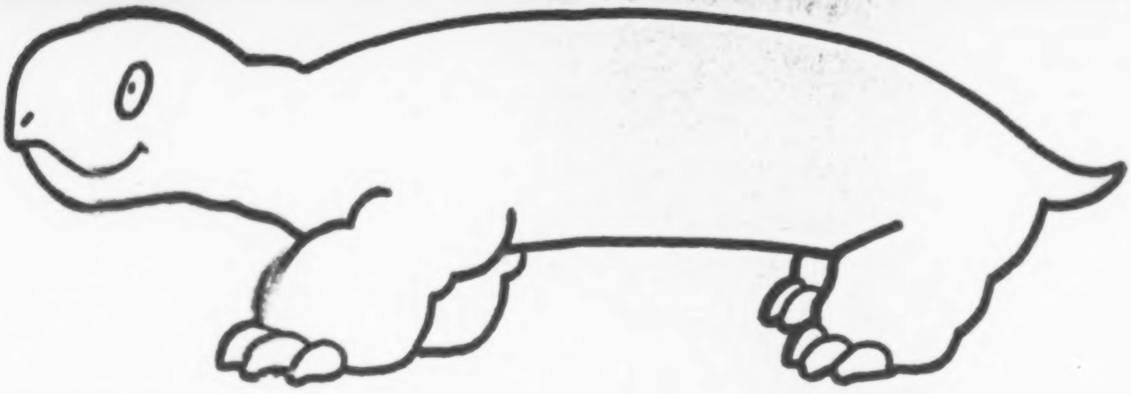
C 342

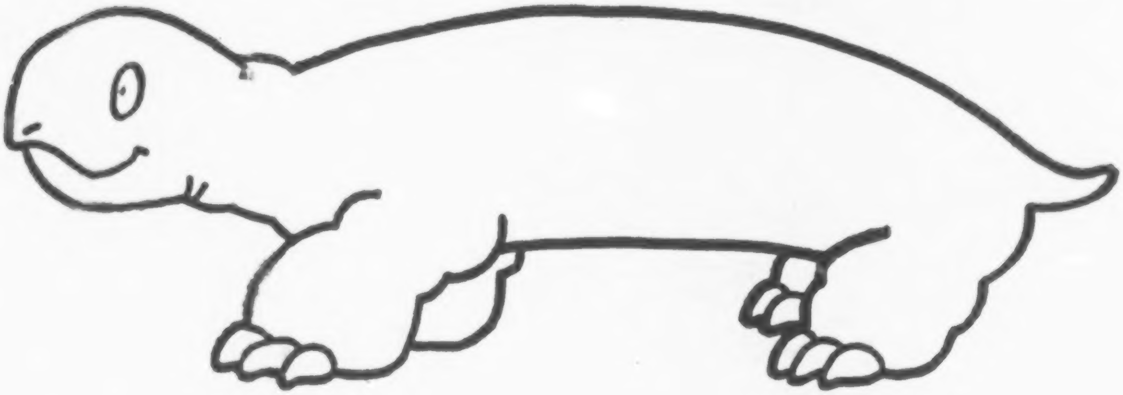


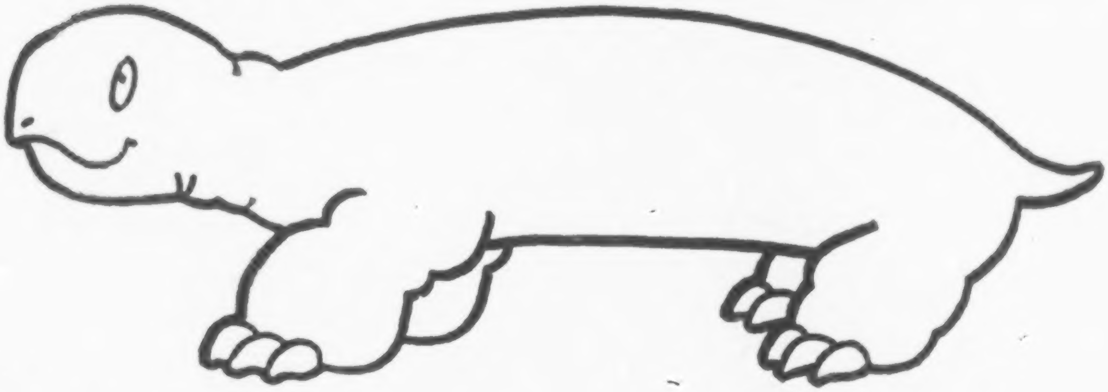


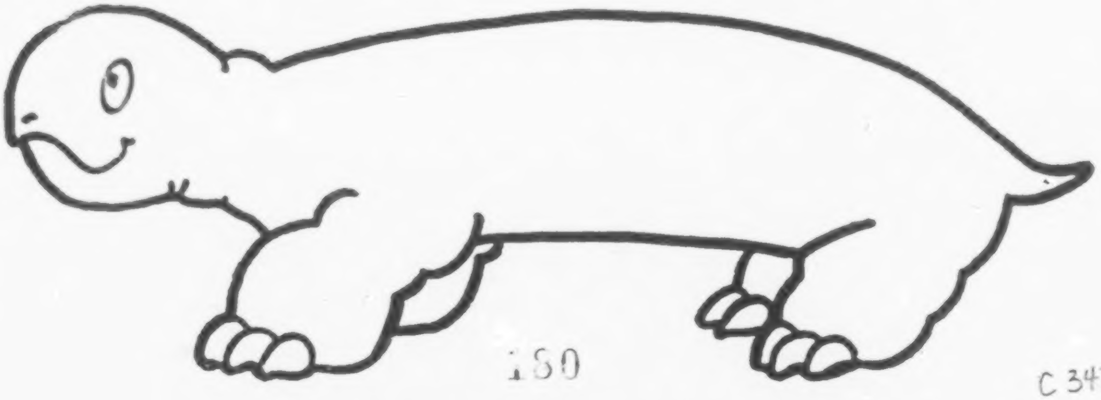












C 342

Creepy Crawlies

Books and Fingerplays

Three-Year-Olds
Four-Year-Olds

CREEPY CRAWLIES
BOOKS
Three-Year-Olds

In the Tall, Tall Grass by Denise Fleming
In the Small, Small Pond by Denise Fleming
Creepy Crawlies (Usborne, First Nature Series)
Reptiles;Science Safari Series
Amazing Crocodiles and Reptiles, Eyewitness Junior

If You Were An Ant by S. J. Calder
The World of Ants Big Book (MacMillan)
The Ladybug and Other Insects by G. Jeunesse and P. de Bourgoing
Insects, Science Safari Series
Insects; Eyewitness Junior
Ants by Henry Pluckrose
Two Bad Ants by Chris Van Allsburg

The Very Hungry Caterpillar by Eric Carle
Butterfly; Stopwatch Series
Butterflies and Moths (Usborne, First Nature Series)
See How They Grow: Butterflies
Monarch Butterfly by Gail Gibbons

Snail's Spell by Joanne Ryder
Toby Turtle Takes a Tumble (Tim Peters and Co.)
Snail Where Are You? by Ungerer
Stick-in-the-Mud Turtle by L. Hoban
Let's Get Turtles by Millicent Selsam
Kermit the Hermit by Bill Peet
House for Hermit Crab by Eric Carle
Box Turtle at Long Pond by William T. George
Hooray For Snail by John Stadler

BEST COPY AVAILABLE

Creepy Crawlies
Songs and Fingerplays
Resources

Ring A Ring O' Roses, Flint Public Library, Flint, MI Revised 1977
- Little Turtle
- My Turtle
- Ant Hill
- Fuzzy Wuzzy Caterpillar
- 1, 2, 3
- The Caterpillar
- Little Frog
- The Frog
- Three Frogs
- Beehive

Finger Frolics, Revised by Liz Cromwell, Dixie Hibner, John R. Faltel, 1976
- Caterpillars
- Little Toad

Finger Frolics, by Liz Cromwell and Dixie Hibner, 1976
- Reptiles
- Sammy

Rhymes for Learning Times, by Louise Binder Scott, 1983
- Little Ants
- Two Little Turtles
- New Butterfly

Eentsy, Weentsy Spider, by Joanna Cole and Stephanie Calmerson, 1991
- The Grasshopper

Piggyback Songs, by Jean Warren, 1984
- The Little Caterpillar
- Caterpillar

More Piggyback Songs, by Jean Warren, 1984
- Pretty Butterfly
- Crawl, Crawl, Little Snake
- Bugs

Move Over Mother Goose, by Ruth I. Dowell
- Caleb the Cricket
- Bennie the Beetle